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# Consumers' Research

BULLETIN

MARCH 1954

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# Consumers' Research Bulletin

## OFF THE EDITOR'S CHEST

WITH the spring planting season upon us it is in order to consider some of the alluring advertising for various products that may be a snare and a delusion for the amateur gardener. Experienced gardeners have long since learned that the production of healthy, blooming flowers, luscious vegetables and thriving shrubs involves the outlay of considerable time, energy, and hard work. There are, however, always a certain hopeful number who from year to year forget this simple fact and succumb to the extravagant promises for some miracle product that will produce "amazing results with less work," or expend their hard-earned cash for some newly heralded "horticultural discovery."

The quality of advertising in the horticultural field has reached such a low state that professionals have become alarmed lest the gardening public be so thoroughly disillusioned that they will not believe the more truthful and less flamboyant claims of responsible firms. The situation has become so serious indeed that the American Association of Nurserymen has appointed a special committee to establish a code of ethics to require an advertiser to state the size of the plants offered by mail and to indicate whether they are nursery grown or "collected." It appears that the consumer often will not be able to distinguish between poorly rooted plants that may have been pulled up from the woods and others from a responsible nursery that have a good root system and are really suited to planting by amateurs.

One advertiser who was seriously criticized for misleading implications in his claims defended himself by pointing to his guarantee that dissatisfied purchasers could have their money refunded. It is well known, however, that in few cases will people, particularly in this field, bother to ask for a refund. Furthermore, by the time dissatisfaction or disappointment has developed with particular plants it may even be forgotten where they were purchased or it might be impossible to prove to the seller's satisfaction that the purchases had been made from a particular source.

An effective procedure for consumers who wish to avoid being taken in by misleading advertising and dubious merchandising practices is to make a careful record of the items purchased, their size, type, description, and the source, particularly in the case of bargain offers, and to see to it that they *do* get their money

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Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

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It will be advantageous if you will, whenever possible, send prompt notice of change of address at least 5 weeks before it is to take effect, accompanying your notice with statement of your old address with name in full. At least a month's notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel. \*CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★ ★ ★ For a brief cumulative index of the 1954 BULLETINS preceding this issue, see page 26.

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## The Consumers' Observation Post

CONGRATULATIONS TO GOOD HOUSEKEEPING for a competent and forthright report on the dip-type silver cleaners, effectively debunking a puff for this type of cleaner that appeared about a year ago in Reader's Digest. Good Housekeeping made extensive use tests and found that the dip-type cleaners removed the oxidation finish on the many patterns of silver which depend in part for their attractiveness on this type of finish, and that after repeated cleanings the silver took on first a white filmy look and then a yellowish tinge. Good Housekeeping also found that instant cleaners were damaging to stainless-steel blades of dinner knives. The best cleaners for silver are the pastes or liquids containing a soft abrasive, the silver polishing cloths, and the electrolytic method. (The last method should not be used on silverware with gray or "oxidized" ornamentation.) CR subscribers will find a discussion of these various ways of cleaning silver and lists of recommended brands of abrasive cleaners in CR Bulletin for February 1954 and the current Annual Cumulative Bulletin.

\* \* \*

THE BLACK AND WHITE TV SETS will be reduced in price in the months to come, according to one trade report. The announcement of color TV sets in the near future has slowed up consumer demand for black and white sets and substantial price reductions will certainly result. Thrift-minded consumers may be interested in the fact that the RCA Service Contract for black and white is set at \$60 compared to a minimum of \$180 for color sets. The black and white sets are likely to be much the more economical buy for some time.

\* \* \*

GLAZED OR CERAMIC DINNERWARE will be the subject of a promotion campaign this year by the United States Potters' Association stressing its cleanability. Sanitation research was carried out on an extensive scale to measure the bacterial cleanability of eating surfaces of different materials including china, plastic, glass, stainless steel, and aluminum. Glass came out on top, with china a close second; stainless steel was third, with aluminum and plastic farther down the line. In the case of eating surfaces on plastic dishes, there was a wide variation in the performance of different types that did not exist between the china and glass surfaces. Another problem for the china industry is how will particular patterns stand up under dishwashing with the new detergents?

\* \* \*

BUTTER which is so high in price that some children today have come to regard margarine as the natural spread for bread is a headache for the U.S. Department of Agriculture. It seems the Department has some 250,000,000 pounds to dispose of, which it purchased in order to keep the price up. The U.S. Department of Agriculture is currently toying with the idea of mixing butter with cocoa butter for resale to industry, because cocoa butter, which is used mainly in chocolate products, is in short supply. Although the price of cocoa butter is somewhat higher than real butter, the confectionary trade is said to prefer cocoa butter because it has a higher melting point and keeps better. The government-owned butter has been paid for by our taxes, and The Wall Street Journal suggests that possibly one solution is to develop new uses for butter and that perhaps with a little educational campaign children could be persuaded to spread it on bread. All of which points up the absurdity of the U.S. Department of Agriculture's present marketing policies. Prices for milk are set by the federal government on the basis of "end use." There is no reason why the present intricate system of pricing could not be applied to make butter more attractive in price to the average consumer and so avoid the surplus problem.

HOME FREEZERS are a problem to move. In fact, the flippant remark "You can't take it with you" often turns out to be a sad reality to the woman who spent the summer filling her freezer with a winter's supply of fresh vegetables and fruit only to find that she unexpectedly has to change her residence. According to one trade journal, the cost of moving the loaded freezer is usually high enough to wipe out all saving, for if the move takes more than 48 hours some provision has to be made for a power connection on the road. Moving jars of home-canned foods is actually easier and some merchants are giving serious thought to promoting home-canning supplies this coming year.

MOTH BALLS, FLAKES, AND CRYSTALS of paradichlorobenzene and naphthalene are widely used in many households. Indeed, the belief seems to be rather general that their mere presence will keep moths away, but that isn't so, notes Dr. John W. Arnold, associate entomologist of the Canadian Department of Agriculture. Both products, to be effective, must be used in proper concentration for a sufficient length of time. In an article appearing in Soap and Sanitary Chemicals, Dr. Arnold reported that the use of para crystals in two zippered garment bags was quite ineffective against moths. In the test procedure, the crystals were suspended from the top of the bag and the zipper was closed. Fumigation using para crystals and a vacuum cleaner was only slightly more effective. It was noted that fumigation with para crystals in containers was impractical; almost twice as much evaporation occurred from 250 gm. of crystals in a cheesecloth bag as from 500 gm. in a cardboard container, and fast evaporation is what is needed.

OVERLOADING ELECTRIC WIRING is a fire hazard to many homes and apartments. Present wiring of homes is already seriously overloaded, yet new electric appliances and equipment are being offered for sale every day according to a warning issued by a New York City Commissioner late last year. Particularly dangerous during the next few months will be the installation of window air conditioners, a problem which is causing great concern to electrical inspectors in some sections of the country. Before making a purchase of any major electrical appliance, consumers should have their current wiring and fuse system checked to make certain that the new appliance can safely be plugged into the current system or they should make provisions for heavy-duty wiring to be installed to carry the extra load safely.

CELLOPHANE WHICH WAS ORIGINALLY PATENTED, developed, and marketed by the du Pont Company is an effective packaging material that has steadily decreased in price since it was first marketed nearly three decades ago by the du Pont Company. As CR pointed out when the federal government filed a suit against du Pont some six years ago under the Sherman Anti-trust Act, to charge monopoly or conspiracy and attempted restraint of trade on a product which has been produced in ever greater quantity at increasingly lower prices is to act in obvious prejudice to the interests of consumers who have been well served by the company with respect to this product. Last December, a federal judge held that the government's complaint in this case should be dismissed, pointing out that "The facts destroy the charges here made. There has been no monopolization or conspiracy or combination or attempt to monopolize shown. The record reflects not the dead hand of monopoly but rapidly declining prices, expanding production, intense competition stimulated by creative research, the development of new products and uses and other benefits of a free economy. Du Pont nor any other American company similarly situated should be punished for its success." Just how much of the taxpayers' money has been thrown away in this type of legal shenanigans against "monopolies" has not yet been estimated, but one columnist pointed out that the trial consumed 67 court days; there were 7882 pages of transcript, 2574 exhibits, of which the government put in 1032; testimony was taken from 36 witnesses, 16 by deposition and 20 in

(The continuation of this section is on page 33)

## Automatic Washing Machines

**B**ECAUSE the automatic washing machine eliminates a considerable amount of the work and attention of the user which is necessary with washers of the conventional-type, too many housewives assume that their new "automatic" will practically take care of itself. When operation and results in washing are not equal to their expectations, the washing machine is held to be at fault. Sometimes this judgment is justified (the machine may be improperly installed, in need of adjustment, or it may have a mechanical or electrical defect), but in a good many cases the machine is being operated incorrectly. This, of course, is not always the fault of the housewife. Too often the instruction book is not clearly written, and does not tell the user enough about the proper method of operation, or the home demonstration was too brief, or was omitted.

CR has determined that most of the automatic washing machines that have been tested recently (say in the past two years) were capable of doing a good job of washing and extracting the water from the clothes, provided that (1) the machine was properly installed and adjusted, (2) water pressure was over 20 pounds per square inch, (3) a sufficient quantity of hot water was available, (4) the weight of a load of clothes did not exceed the manufacturers' recommendations, (5) the proper amount and type of soap (and water softener in hard water) or synthetic detergent was used, and (6) the controls were properly operated.

One of the most perplexing problems is to decide which brand of soap or detergent to use, and how much. Some instruction books list brand names of soaps or synthetic detergents, and water softeners which will give good results in the particular machine, provided the proper amount is used. When the water is hard a water softener (such as *Calgon*) must be used with soap, and also in the rinse water, to prevent the formation of soap curd, which can cause spotting of the clothes. The amount of softener needed depends upon the degree of hardness of the water, and if this is not known, the proper amount must be found by experimentation. Synthetic detergents will work satisfactorily in hard water without the necessity of softening the water, but the amount must be carefully measured because too much of a "high-sudsing"

type of detergent may overload the machine and cause poor washing action. When a machine is very sensitive to suds, a "low-sudsing" detergent (such as *All* or *Spin*) must be used to insure proper operation. If the owner does not get satisfactory washing results, she may write to the manufacturer for advice. She should include an exact description of her troubles and give the hardness of the water in her locality.

The five washers in the test last conducted by Consumers' Research operated satisfactorily, with both soap (*Lux*) and a "high-sudsing" synthetic detergent (*Tide*) when the correct amount was used. An excess quantity of *Tide* caused some machines to operate abnormally during the spin period (because of the increased "drag" on the tub caused by suds). In some cases the effect was even to cause a device called a motor overload protector to turn off the machines.

The five automatic washers included in this test had a number of similar features. Each used an oscillating agitator to provide the washing action, had the loading door at the top, and extracted water from the clothes by spinning the tub. None of the machines required bolting to the floor.

There were four different methods used in the machines for controlling the water level. This is a matter of importance in choosing a washer if the water pressure in the home is low (say 15 or 20 pounds per square inch at times, or regularly). The *Hamilton* and *Speed Queen* used a timer control which allowed the water to enter the machine for a predetermined time, and at a water pressure of 40 pounds per square inch the tub was filled to the correct level. At low pressure, neither machine filled the tub to the correct level when the control was set on "Hot." The *Hamilton*, however, could be adjusted with a screwdriver to provide more time for filling, if the machine was installed in a home with low pressure. The *Speed Queen* could be filled properly by operating the control manually. The other machines used a float switch (*Whirlpool*), a weight switch (*Easy*), or a pressure switch (*General Electric*) to turn off the water flow when the proper level was reached. These three machines filled to the correct level during the tests, regardless of the water pressure. This type of mechanism is much to be preferred, when al-

normally low water pressures may occur at times.

All the machines in this test except the *GE* had an independent on-off switch, which was operated by lifting or depressing the control knob. In order to stop the *GE* machine during its cycle, the plug had to be pulled, or the control knob slowly rotated to the "off" position; either procedure would involve some inconvenience.

An undesirable characteristic of the *Easy*, *General Electric*, and *Speed Queen* was the fact that the tub continued to spin for one minute or longer after the machine had ended its cycle. The *Whirlpool* tub coasted only a few seconds, and the *Hamilton* had a brake which very quickly stopped the rotation of the tub when the cycle ended or when the control was turned off manually. A number of women have been injured when they reached into the tub of an automatic washer while it was spinning. In at least one reported case, the control indicated that the machine was "off," although the tub was still rotating. A safety device to prevent this type of accident is incorporated in the *Norge AW450*; a switch stops the tub if the lid is opened during the spin period.

In CR's opinion, all automatic washers using a spin to extract water should have a safety shut-off switch and an automatic brake.

With an unbalanced load, the *Easy* and *Speed*

*Queen* did not spin at normal speed; the tub of the *Whirlpool* bumped the cabinet during the spin; *Hamilton* and *General Electric* were automatically stopped by their safety devices. The *GE* was more sensitive than the others to unbalanced loads; the overload protector on CR's washer turned it off when the load was only slightly unbalanced.

The five machines included in this test did not show any important differences in washing ability. The *Easy*, *Hamilton*, and *Whirlpool* were judged slightly better in over-all performance and convenience than the *GE* and *Speed Queen*. The prospective buyer should remember, however, that even the best of the automatic washers cannot be counted on to run for years with no need for occasional servicing or replacement of parts; therefore no consumer should buy a machine of any make without first taking steps to assure herself that prompt and efficient dealer service will be available whenever needed. Assured availability of and prompt repair service is fully as important as any other factor in the choice of an automatic washing machine.

All the washers successfully passed the electrical safety tests. Radio interference was negligible except for the *Easy*, which caused interference during some parts of its cycle.

## A. Recommended



**Easy Spirulator, Model ADC**

(Easy Washing Machine Corp., Syracuse) \$290.

**Dimensions and Description:** 39 $\frac{1}{2}$  in. to top of control panel, 30 in. wide, 26 $\frac{1}{2}$  in. deep. Door, top, and cabinet were finished with baked-on enamel. The tub was finished with porcelain enamel. Maker's capacity rating, 8 lb. Instructions permit use of either

a soap or a synthetic detergent. Temperature of wash water adjustable to "Hot" or "Warm" on "regular fabrics" cycle only. All rinse water was automatically mixed to about 100°F. The water level was controlled by a weight device and was not affected by low or variable water pressure (desirable). No setting was provided for smaller-than-normal loads. Action could be stopped or started at any part of the cycle. Washer had two separate and different cycles, one for regular fabrics and a shorter cycle for "fine fabrics." The "regular fabrics" cycle consisted of a 4-min. (approximately) fill, a washing period which could be set up to 10 min., a spin with a spray rinse, an agitated overflow rinse, and a damp-dry spin, for a total time of 29 $\frac{1}{2}$  min., with a 10-min. washing period. The "fine fabrics" cycle consisted of a

4-min. (approximately) fill, a washing period of 3 min., a spray rinse, an agitated overflow rinse, and a damp-dry spin, for a total time of 15 $\frac{1}{2}$  min.

**Performance in Test:** Effectiveness in washing, good. Effectiveness in extracting water from the clothes, good (water left in 8-lb. load of clothes at end of regular cycle was 75% of dry weight of clothes, or 6 lb.). Water consumption for complete cycles: regular cycle with control set at "Hot," 22 $\frac{1}{2}$  gal. of hot water, 8 $\frac{1}{2}$  gal. of cold water; fine fabrics cycle, 15 gal. of hot water, 12 $\frac{1}{2}$  gal. of cold water. Current draw at start of spin, 9 amperes (good). Energy consumption for regular fabrics cycle, 185 watt-hours; for fine fabrics cycle, 100 watt-hours.

**Observations from Use Tests:** Users complained that tub "coasted" too long after end of cycle.

## A. Recommended



**Hamilton, Model 330** (Hamilton Mfg. Co., Two Rivers, Wis.) \$300. Essentially the same machine as *Norge 422*, which was previously tested (CR BULLETIN, April 1952).

**Dimensions and Description:** 40½ in. to top of control panel, 26

in. wide, 28 in. deep. Door and cabinet were enameled. Top and tub, porcelain enameled. Maker's capacity rating, from 8 to 9 lb. Instructions permit use of either a soap or synthetic detergent. Temperature of wash water adjustable by setting control at "Warm" or "Hot." All rinse water was automatically mixed to about 100°F. The water level was time-controlled, and could be adjusted for low or high pressures. (See text at page 5 at column 2.) No setting was provided for smaller than normal loads, but the amount of water used could be reduced by manual operation of the control knob. Action could be stopped or started at any part of the cycle by pulling out and pushing in the control knob. A complete cycle consisted of a 4-min. fill, a washing period which could be set up to 10 min., a spin, an

agitated and an overflow rinse, a spray rinse and a damp-dry spin, for a total time of 32½ min., when a 10-min. washing time was used.

**Performance in Test:** Effectiveness in washing, good. Effectiveness in extracting water from clothes, good (water left in 8-lb. load of clothes was 70% of dry weight of clothes, or 5.6 lb.). Water consumption for complete cycle with control set at "Hot" for washing, 23½ gal. of hot water, 10½ gal. of cold water. Current draw at start of spin, 17 amperes for a few seconds (satisfactory). Energy consumption for complete cycle, 155 watt-hours.

**Observations from Use Tests:** Users stated that control knob was hard to push and pull, and occasionally jammed.

## A. Recommended



**Whirlpool, Model 531540** (Whirlpool Corp., St. Joseph, Mich.) \$290. Model 531530, \$270, is similar but has no "Suds-Miser." Caster assembly to enable user to move washer easily, \$15 extra.

**Dimensions and Description:** 36 in. high, 24½ in. wide, 25½ in. deep. Door, top, and cabinet were

finished with baked enamel. Tub, porcelain enameled. Maker's capacity rating, 8 lb. Instructions permit use of either a soap or synthetic detergent. Temperature of wash water adjustable by setting control to "Medium," "Hot," or "Warm." All rinse water was automatically regulated to about 100°F. The water level was controlled by a float-operated switch and was not affected by low or variable water pressure (desirable). No setting was provided for smaller than normal loads, but the amount of water used could be reduced for smaller loads by manually advancing the control knob. The washer could be stopped or started at any point in the cycle. A complete cycle consisted of a 4½ min. (approximately) fill, a washing period which could be set up to 20 min., a spin with 4 spray rinses, an agitated rinse, a spin with 2 spray rinses, and damp-dry spin, for a total time of 34 min., when

a 10-min. washing period was used.

**Performance in Test:** Effectiveness in washing, good. Effectiveness in extracting water from clothes, good (water left in 8-lb. load of clothes was 75% of dry weight of clothes, or 6 lb.). Water consumption for complete cycle with control set at "Hot" for washing, 25½ gal. of hot water, 7½ gal. of cold water. When the "Suds-Miser" was used, the second wash required 10½ gal. of hot water, 7½ gal. of cold water. Current draw at start of spin, 7 amperes (good). Energy consumption for cycle, with 10-min. washing period, 150 watt-hours.

**Observations from Use Tests:** Users complained that the agitator started before the tub filled when using the suds return, and suds were splashed out unless the lid was closed.

## A. Recommended



### General Electric, Model

**IWA450KI** (General Electric Co., Louisville, Ky.) \$300. *Model IWA650KI*, \$350, is basically similar, but has an on-off switch, and more "gadgets."

**Dimensions and Description:** 40 in. to top of control panel, 26½ in. wide, 27 in. deep. Door, top, and tub, porcelain enameled. Cabinet, enameled. Maker's capac-

ity rating, 8 lb. Instructions permit use of either a soap or synthetic detergent. Temperature of wash water adjustable by setting control at "Warm" or "Hot." The water level was controlled by a pressure-operated switch and was not affected by low or variable water pressure (desirable). No setting was provided for smaller-than-normal loads, but the amount of water used could be reduced by pushing a button to turn off the water when the desired level had been reached. The control knob could be advanced during the cycle, but there was no convenient switch to turn off the machine during the cycle (i.e., the plug had to be pulled or the control rotated slowly to "OFF" to stop the machine during its cycle). A complete cycle consisted of a 6½-min. (approximately) fill, a washing period which could be set up to 14 min., a spin, a spray

rinse and a spin, an agitated rinse and a damp-dry spin, for a total time of 43 min., when a 10-min. washing period was used.

**Performance in Test:** Effectiveness in washing, good. Effectiveness in extracting water from clothes, good (water left in 8-lb. load of clothes was 73% of dry weight of clothes, or 5.8 lb.). Water consumption for complete cycle with control set at "Hot" for washing, 25½ gal. of hot water, 15 gal. of cold water. Current draw at start of spin, 7 amperes (good). Energy consumption for complete cycle, 200 watt-hours.

**Observations from Use Tests:** Users complained that tub coasted too long after end of cycle, and water was often too cold (about 75°) when the temperature switch was set at "Warm." Machine stopped when load was only slightly unbalanced.

## A. Recommended



### Speed Queen, Model A11 (Speed Queen Corp., Ripon, Wis.) \$300.

**Dimensions and Description:** 40½ in. to top of control panel, 25¾ in. wide, 27 in. deep. Lid and cabinet finished with baked-on enamel. Top surface, porcelain enameled. Tub was finished with porcelain enamel. Maker recommends 6- to 7-lb. load for best efficiency, but 8-lb. loads were washed satisfactorily during test. Instructions permitted use of either a soap or synthetic

detergent. Temperature of wash water adjustable to "Hot" or "Warm." When the control was set at "Hot," the water for the overflow rinse was cold; when set at "Warm," the rinse water was warm. The water level was controlled by a timer, which is not as desirable as a weight, pressure, or float device for homes where water pressure is low or variable. (At low water pressure, the tub did not fill to the proper level for washing when set at "Hot"; the control then had to be operated manually to obtain a sufficient amount of water.) No setting was provided for smaller-than-normal loads (although the instructions stated that there was a small-load setting, none was marked on the control dial), but the amount of water used could be reduced by advancing the control manually when the desired water level was reached. The washer could be stopped or started at any part of the cycle. A complete cycle consisted of a 4½-min. fill, a

washing period which could be set up to 12 min., a spin with 2 spray rinses, an agitated overflow rinse, a spray rinse and a damp-dry spin, for a total time of 34½ min., when a 12-min. washing period was used.

**Performance in Test:** Effectiveness in washing, good. Effectiveness in extracting water from the clothes, fairly good (water left in an 8-lb. load of clothes was 80% of dry weight of the clothes, or 6.4 lb.). Water consumption for complete cycle with control set at "Hot," 17½ gal. of hot water, 25½ gal. of cold water. Current draw at start of spin, 9 amperes (good). Energy consumption for complete cycle, with 12-min. wash period, 220 watt-hours.

**Observations from Use Tests:** Users complained that tub coasted too long after end of cycle, water splashed out even when lid was closed, and rinse water was cold when the temperature control was set at "Hot."

Abbreviated listings of automatic washing machines previously listed by CR.

#### A. Recommended

*Blackstone, Model 250* (Blackstone Corp., Jamestown, N.Y.) \$330. cr53  
*Norge, Model AW-422* (Norge Div., Borg-Warner Corp., Chicago 54) \$279. Models AW-425 at \$279 and AW-450 at \$299 are essentially the same except that AW-450 has a safety switch which stops the machine if the lid is opened during the spin period. cr52

\* \* \*

*Bendix Economat, Model H-502* (Bendix Home Appliances, Inc., South Bend 24, Ind.) \$230. This machine did not extract as much water from the clothes as the machines listed above, and is not recommended for use with a clothes dryer. Manufacturer states later models of the *Economat* have been improved. cr52

#### B. Intermediate

*ABC-O-Matic, Model 50* (Altorfer Bros. Co., Peoria, Ill.) \$300. cr51  
*Apex Wash-A-Matic, Model 6000* (The Apex Electrical Mfg. Co., Cleveland 10) \$300. cr53.  
*Bendix Gyramatic, Model G-314* (Bendix Home Appliances, Inc.) \$300. Model WCG is essentially the same. cr52  
*Frigidaire, Model WO-65* (Frigidaire Div., General Motors Corp., Dayton, Ohio) \$300. Originally rated A. Recommended, this machine has been dropped to B. Intermediate because of the number of complaints that it tangles clothes. cr51  
*Maytag, Model AMP* (The Maytag Co., Newton, Iowa) \$300. cr50  
*Universal, Model AW-S-30, Style WMI-2* (Universal Major Electric Appliance Co., Lima, Ohio) \$300. cr53  
*Westinghouse Laundromat, Model L-5* (Westinghouse Electric Corp., Mansfield, Ohio) \$300. Model LB-6 is essentially the same. cr51

## Food Technology is Advancing—But the Food is Worse

**T**HE *Medical Press*, a well-known British journal for physicians, has discussed editorially the degradation of the food supply through oversophistication in processing, preserving, "improving," and other techniques which have grown enormously in recent years.

Prominent among these changes are the baking of loaves of bread which are very large for their weight, containing "as much water as can be persuaded to 'stand up'"; the fat extenders and the anti-staling agents used in bread are also mentioned.

While not all the operations of food technologists are needless or harmful or make for deterioration of the food supply, there is in the practical operation of food plants a good deal that is open to serious objection. Nutritionists, too, have made their contribution to the deterioration of the public taste and discretion in selection and judgment of foods. For example, a prominent scientist attached to the British Ministry of Food once remarked that "stale eggs were, on a nutritional basis, as good as fresh eggs." The *Medical Press* questions whether any evidence exists for this extraordinary statement and asks, "Have palatability, salivary and gastric secretions no nutritional value?" The comment continues: ". . . ten years of Ministerial catering certainly seems to have reduced our taste buds to a state of weary acquiescence indistinguishable from

disuse atrophy [loss of function from lack of use]."

The editorial concluded with expressions of regret that "We have started down a long, steep slope of sophistication, processing, bedevilment—call it what you will—the end of which we cannot foresee. Scarcely a single article of diet arrives on our tables unembellished by the technologist's art. Most of the substances employed are as yet enigmatic—we do not know their long-term effects, though some we do know now to be potentially poisonous. Unless the medical profession takes a firm stand, expediency will continue to triumph over caution and common sense, and we may well be faced with irreversible results."

"It is more than time," continues the *Medical Press*, "that our present lethargy and inertia were replaced by an alert and suspicious vigilance and that all proposed and existing food additives were subjected to the sharpest scrutiny"—else "we may well spend the next generation in medicine trying to unscramble" the harm that has been done to the human organism by prevalent factory practices in preservation, processing, and sophistication of foods.

Since the *Medical Press* editorial appeared, work has been done in the United States which establishes on the basis of careful experiments that fresh eggs are not only "better looking" than storage eggs but are more nutritious. Eggs suffered a 16 percent loss of folic acid in six months and a 27 percent loss in a year of cold storage. (According to Science News Letter, reporting the work of four investigators at Michigan State College, previous studies have indicated losses in protein, riboflavin, niacin, vitamin B-6 and pantothenic acid.)

## Electric Lamp Cord Accessories

*Ten-cent stores and hardware stores are full of all sorts of gadgets to help the home repairman in repairing and connecting his own extension cords. Subscribers with little training in the principles of electric wiring may be confused in choosing from among such a large variety of gadgets; on this account CR reports a brief study of some of the various types of accessories now being offered by stores.*

A LARGE VARIETY of electric extension cords, outlets, and accessories are now offered. The types studied by Consumers' Research include attachment plugs, cube taps, and wire splicers (all with fast-clamping features), a cord shortener, a cord protector, safety outlets, and safety covers for existing convenience outlets.

Most of the electrical connecting devices with quick attaching features that were examined by CR employ a sharp brass prong to pierce the insulation. This type of connection is probably considerably less desirable than a good connection made to the terminal screws of a conventional plug; on the other hand, the new clamping connections are simple to make, and they avoid the possibility of a short circuit or shock hazard caused by a loose strand or two of wire all too often found in poorly connected plugs. All connectors of the new style were designed for only a single kind of wire, No. 18 standard parallel flexible cord, commonly known as lamp cord and now almost universally available in electrical and 10-cent stores. No other type of connecting wire (such as twisted cord, or round two-conductor cord) is suitable for use with these devices, and it was CR's experience that they were better adapted to cord having plastic rather than rubber insulation. Some of the rubber-covered parallel cord is also a bit too large to fit correctly in some of the devices.

Splicing of extension cords, although not a safe practice, and hence not recommended, is often done by householders. A cord splicer in this case may be the lesser of two evils, when

compared to taped connections made by an amateur. CR does not recommend the use of lamp cord when connecting in a permanent fixture, such as a closet light; lamp-cord-connected receptacles should never be used for a permanent wiring installation, that is one attached to a building and thus intended to remain fixed in position and use (see March 1953 CONSUMERS' RESEARCH BULLETIN, page 20).

The *Coilzit* cord shortener is made out of transparent plastic; it may be handy to take up excessive lengths of cords on electric clocks,

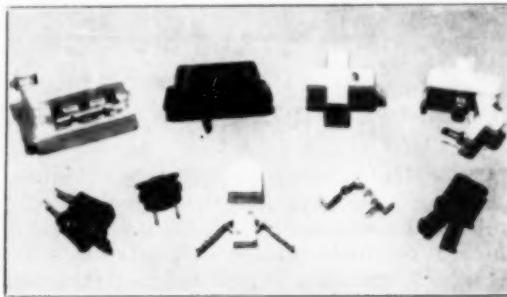


Figure 1

*A number of cube taps and plugs attach quickly to standard No. 18 parallel flexible cord, but are not useful with any other type of cord (twisted, or round rubber insulated). Top row, left to right: Academy 3-way automatic Tap, Monowall Quick clamp Triple Outlet, Monowall Quick clamp Triple Cube Tap, Academy 3-way automatic Cube Tap. Bottom row, left to right: Monowall Quick clamp plug, AbholoC Snug Plug, Academy Automatic Plug, Academy automatic Add-A Tap, Meteor 1-2-3 Cap.*

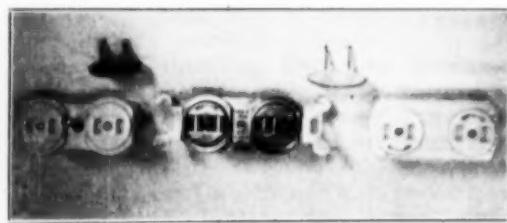


Figure 2

*The plastic caps (above) to fit unused convenience outlets depend on friction between plastic prongs and the contact springs in the outlet to protect the children from reaching live contacts of outlets; the three duplex outlets below the caps give better protection since the protective caps are fixed to the outlets and must be given a quarter turn before contact can be made.*

lamps, and other small electrical units that are not permanently installed, as long as the device is one like a clock, table radio, or table lamp, that draws only small amounts of current. When used on cords of heavy-duty appliances, the heat generated by the current would be sufficient at times to deform the *Coilzit* cord shortener.

The *Superlon* plastic cord cover is useful for protecting a connecting cord and keeping it from tangling; it is, perhaps, most useful on the telephone wire connecting the box to the hand-piece (transmitter and receiver).

The safety outlets with a "snap-back" cover may be very desirable in homes to prevent small children from inserting metallic objects in the openings of convenience outlets. In order to have more or less complete protection, all the accessible outlets and extension cords used should have a safety cover of the snap-action type. (The ordinary plastic outlet covers made to be inserted in the two openings of an outlet box [see Figure 1] are not fully dependable because they rely on the undefined friction of the contact springs in the outlet and may often be removed easily by the exploring fingers of a child.)

There are some low-grade electrical accessories on the market; many of these lack any marks to show maker's name, brand, or Underwriters' inspection. It is better to avoid all such items, and buy *only* electrical accessories that carry the Underwriters' Laboratories' Label or symbol (*UL*) indicating that they have met certain minimum safety requirements set by Underwriters' Laboratories, Inc., which is a non-profit enterprise sponsored by the National Board of Fire Underwriters. A majority of electrical gadgets and many appliances do not bear a manufacturer's name and address; in case of accident or injury, there would often be no responsible firm to look to for redress, where the maker has not shown his full corporate name. (Even when the name is on a card or sticker, the purchaser is at a disadvantage; such items should not be bought unless Underwriters' approval is also shown thereon; in the latter case, and in any case if the item is purchased, the card or sticker should be retained and filed.)

A typical example of one of the low-grade unmarked fittings was brought recently to CR's attention. It was a male extension cord cap without any maker's or other identification. The plug had steel instead of brass prongs (undesirable) and the insulation material, which was a kind of rubber, was of very poor quality, representing a fire and shock hazard. The plug, itself, consumed 10 watts of electricity (as leakage current), and in a short time got too

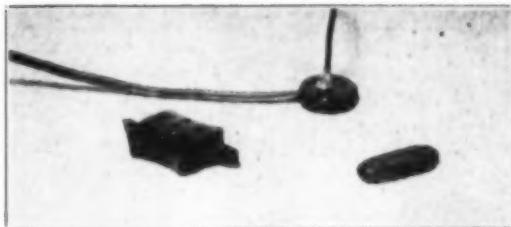


Figure 3

Plastic cord splicers intended to be used for reconnecting broken or damaged extension wires (a practice not recommended by CR). Left to right: Monowall Quick clamp Cord Splicer, AbboloC Lamp Base Splice, AbboloC Cord Splicer.

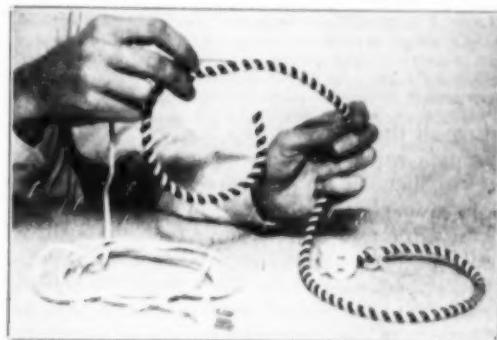


Figure 4

*Superlon* plastic cord cover to protect extension cords and telephone wires and to prevent kinking.

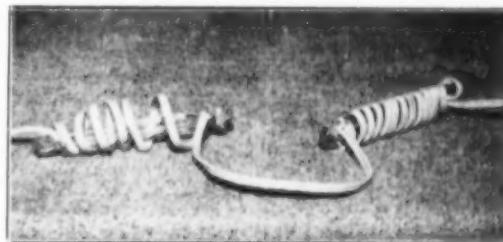
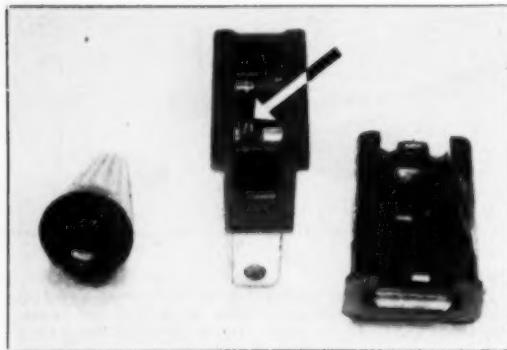


Figure 5

*Coilzit*, a flat piece of plastic designed to hold excess length (up to 3 feet) of extension cord.

hot to touch. The *Academy 3-way automatic Tap* was the only one of the accessories tested that had the name and address of the manufacturer as well as the voltage and current rating plainly marked on the device. CR considers that the above minimum information should be present on *all types of electrical devices* (appliances, of course, should show wattage ratings also). It might be argued that the limited space on smaller devices would not be sufficient for



**Figure 6**

*Left: A solderless wire connector, commonly used by electricians, should never be used to connect flexible cords for any open or partially open wiring (in a lamp base, for example). Center and right: the Gilbert Safe-T-Plug; note the short sharp prongs designed to pierce the insulation.*

listing all the information; however, CR found that this would be no problem on any of the devices included in the present study. Some types of insulated wires used in concealed house wiring are marked as to wire size; this practice would be even more desirable for marking extension cord wires. At the present, even extension cord sets listed by Underwriters' Laboratories are not marked to show safe current and voltage ratings.

## Attachment Plugs, Taps, and Splicers with Fast-Clamping Feature

### A. Recommended

**Academy Automatic Plug** (Academy Electrical Products Corp., New York 34) 15c. Well-designed large brass prongs give good contact when used as recommended. Easy to attach. Listed by *UL*, but marking to that effect not very clear.

**Gilbert Safe-T-Plug** (Gilbert Mfg. Co., Inc., N.Y.C.) 10c. Well designed; convenient to use. Listed by *UL*.

**Monowatt Quick clamp plug** (Monowatt Inc., Dept. of General Electric Co., Providence, R. I.) 10c. Well designed; convenient to use. Listed by *UL*.

**Monowatt Quick clamp Triple Cube Tap** (Monowatt Inc., Dept. of General Electric Co.) 25c. Listed by *UL*.

### B. Intermediate

**Abboloc Snug Plug** (The Ball & Socket Mfg. Co., West Cheshire, Conn.) 10c. Not as convenient to connect as *Academy* or *Monowatt*. Listed by *UL*.

**Academy 3-way automatic Cube Tap** (Academy Electrical Products Corp.) 19c. Hinged plastic body held in locked position by a convenient compact spring-steel latch; construction deemed not

as desirable a construction as that of the *Monowatt*. Convenient to use. Listed by *UL*.

**Monowatt Quick clamp Cord Splicer** (Monowatt Inc., Dept. of General Electric Co.) 19c. Convenient to use. Listed by *UL*.

### C. Not Recommended

**Abboloc Cord Splicer** (The Ball & Socket Mfg. Co.) 15c. Inconvenient to use. Poorly designed. Device is held together by two self-tapping screws threaded into plastic; it is considered that the threads in the plastic may easily be damaged or become ineffective in use.

**Abboloc Lamp Base Splice** (The Ball & Socket Mfg. Co.) 15c. See comments under *Abboloc Cord Splicer*. This splicer is not convenient to use in a lamp base where space is limited, and has other disadvantages.

**Academy 3-way automatic Tap** (Academy Electrical Products Corp.) 25c. Tap has provisions inside the plastic housing for surface mounting, a practice not recommended by CR (see *CONSUMERS' RESEARCH BULLETIN*, March 1953).

**Academy automatic Add-A-Tap** (Academy Electrical Products Corp.) 15c. This tap is intended to be attached anywhere along an extension cord made of No. 18 standard parallel flexible cord; the device has the fault that it lacks means for strain relief and may present a shock and fire hazard in use.

**Meteor 1-2-3 Cap** (Meteor Electric Corp., Brooklyn, N. Y.) 12c. Marked *Leviton* on blades. The brass prongs of the plug are too short to pierce the insulation positively; may present some degree of fire hazard. Listed by *UL*.

**Monowatt Quick clamp Triple Outlet** (Monowatt Inc., Dept. of General Electric Co.) 29c. Provision for mounting on surface, which is objectionable, as encouraging use as permanent wiring.

**Snapit Kwik-Cap Attachment Plug** (Cable Electric Products, Inc., Providence 7, R. I.) 10c. Marked *Leviton* on blades. Did not make reliable contact, for reason noted on *Meteor 1-2-3 Cap*, with which it is practically identical. Listed by *UL*.

## Safety Outlets

### A. Recommended

**No-Shok Safety Duplex Outlet** (Bell Electric Co., Chicago 8) 39c. For permanent installation in standard wall or baseboard box by a qualified workman. Listed by *UL*.

**No-Shok Safety Extension Cord Set** (Bell Electric Co.) 79c. 9-ft. extension cord set with two outlets in one unit, each protected by a rotary-snap-action safety cover. Listed by *UL*.

### C. Not Recommended

**No-Shok Safety Current Tap** (Bell Electric Co.) 39c. Depends on friction against contact spring in outlet or receptacle to hold it in position, and because

of its large size it might very easily be removed from some outlets by small children. Listed by *UL*.

## Other Accessories

### B. Intermediate

**Coilzit Cord Shortener** (Coilzit Products, Inc., Long Island City 3, N. Y.) 10 for \$1. Flat transparent plastic; shortens cord by an amount up to 3 ft. See text and Figure 5.

**Saf-Gards** (Burlington Products Co., Burlington,

N. J.) 5 for 25c. Simple molded-plastic outlet covers for standard outlets. The covers depend on friction on contact springs in outlet to hold them in place; in some cases they will come out easily, so that the safeguard is lost.

**Safety Cap** (Amerline Inc., Chicago 22) 2 for 10c.  
See comment under *Saf-Gards*.

**Superlon Plastic Cord Cover** (Superior Plastics, Div. Commonwealth Plastics, Inc., Chicago 12) 29c. Plastic spiral (helix), about  $3\frac{1}{2}$  ft. long. See text and Figure 4.

## Off the Editor's Chest

(Continued from page 2)

back if the plants do not grow or bloom as claimed.

It is interesting to note at this point that several spectacular promotions of last spring have run into trouble. One was the so-called "Blue Rose" and another, the "8 Foot Living Rose Fence" both promoted by the Garden Guild of America, particularly on the radio. The Blue Rose was touted "as one of the most amazing floral discoveries of our time" and the 8-foot-fence of roses was supposed to enable the backyard gardener to "surround your house with a giant 8 foot high living fence of roses that thrives in the winter." (It turned out that the roses did not bloom in the winter but carried a certain amount of red berries.) The Better Business Bureaus had a running fight with the promoter of these products; he was charged by the postal authorities with operating a scheme to defraud, and at last report he was in financial difficulty.

Another impressive advertising campaign of 1953 was for a chemical fertilizer called *RX-15* for which claims were made that it was the result of atomic research and a new discovery, that by using the product anyone could produce an abundance of flowers and vegetables on a small patch of ground with little or no work merely by sprinkling the plants with water containing *RX-15*, that the ingredients in it acted immediately upon application to the leaves and when applied to the roots reached the leaves of a plant in 15 minutes, and some eleven other claims which the Federal Trade Commission recently found false, misleading, and deceptive. The Commission ordered the Garden Research Laboratories to discontinue making these claims.

Before any amateur gardener is inclined to make out an order for this year's miracle-worker he will do well to send to the Federal Trade

Commission for Docket 6093 in the matter of Garden Research Laboratories and read carefully the claims made, contrasted with the Federal Trade Commission's findings. Then bear in mind the fact that *RX-15*'s misrepresentations were typical of many products and that even in this scientific day and age the principles of good gardening still call for hard work and a careful selection of good-quality seeds or plants.

Several years ago there was quite a lot of excitement over the new "soil conditioners." As one advertising journal pointed out, garden sections in leading newspapers blossomed with more than a dozen pages of competing ads, each wilder and more exaggerated than the next. The situation got so far out of hand that the soil conditioners were extensively overpromoted and disillusionment inevitably set in, leaving dealers overstocked in many cases. It is likely that there may be some value in some of the various soil conditioners, but they are not panaceas and prices at the present time are much too high for extensive use. The absurdly exaggerated advertising not only destroyed the amateur garden market for such soil-improving products, but has been held responsible for killing, at least for the time being, efforts to interest the commercial gardener in the use of this type of product.

Last fall, in some sections of the country, there were promotions of a new type of grass called *Meyer Zoysia-Merion Bluegrass Combination Turf*, described as "a warm season grass which is drought tolerant and resistant to disease and insects." According to the U.S. Department of Agriculture, this turf is best adapted to the triangular area which has as its points Philadelphia, St. Louis, and Norfolk. The *Meyer Zoysia* is established by plugs or sprigs and not

by seeds. There were numerous complaints that various stores in some areas were selling *Meyer Zoysia* seed and the U.S.D.A. reported that seed produced from *Meyer Zoysia* sod is not true to type and that the seed offered was probably the common *Zoysia Japonica*, which is quite undesirable for lawn use.

The various bargain bulb offers are also a problem to government and other agencies which endeavor to protect consumers against misleading advertising. The Better Business Bureaus in various sections of the country have been quite active in exposing the deceptive nature of certain bargain bulb offers, particularly those that promise amazing results for very little outlay of money. As experts know, the best results are obtained from large-sized bulbs. The Holland bulb growers, for example, are not permitted to export any May-flowering tulip bulbs unless they measure between  $4\frac{1}{4}$  and  $4\frac{3}{4}$  inches in circumference. Early tulips are expected to measure about 4 inches, imported daffodils about  $4\frac{3}{4}$  inches. Sometimes so-called bargain-package bulbs are so small that a dealer reported that a hundred of them could be held in the palm of the hand. The Michigan Bulb Co., subject of frequent complaint by the Better Business Bureaus, was reported in the December issue of the St. Louis Better Business Bureau Bulletin to be one of the leading advertisers of what the Bureau described as the "non-blooming" tulip bulb.

The code of ethics of some of our best newspapers is so low in the field of horticultural product advertising that they accept ads that are about on a par with those that appeared at the turn of the century for cancer, tuberculosis, and diabetes cures. Consumers who discover that they have been taken in by some stupendous and grossly misleading claim will do well to complain to the magazine or newspaper in which the advertisement appeared. One horticultural expert has wisely pointed out that as the number of critics multiply, the horticultural magazines,

at least, which depend for their well-being on the good will of the amateur and of the commercial nurserymen will be forced to listen. He also notes that in the present public ignorance of horticultural standards many gardeners, particularly beginners, may be taken in by the glowing advertisements and will purchase for \$5 or \$10 apiece plants which they could get at their own local nurseries at more reasonable prices. While the public remains thus gullible, the advertising will no doubt continue.

It is to be hoped that amateur gardeners this spring will learn to be more skeptical of miracle claims for fertilizers, soil conditioners, new and exciting plants and shrubs, and will endeavor to check the claims made with such agencies as the Better Business Bureau in their city or their State Agricultural Experiment Station. It will be helpful, too, in combating the many rackets in this field if consumers will keep a copy of the alluring advertisement which induced them to part with their cash, and complain emphatically to the newspaper or magazine publisher if the merchandise fails to live up to the promised performance. Probably the Federal Trade Commission, Division of Anti-Deceptive Practices, Washington 25, D.C., should also receive a copy of such letters of complaint. Misleading and extravagant claims for horticultural products should be as carefully checked as the better papers and magazines now censor claims for remedies for diabetes and tuberculosis, even if the consequences, in the case of misrepresentation of garden items, are serious only to the purchaser's pocketbook and muscles. It will probably be best to avoid buying garden seeds, bulbs, shrubs, and the like advertised on radio or television, for with these advertising media the customer will have no usable or documentary proof of the claims or representations relied upon in making a purchase. Because of this fact, much radio and TV advertising tends to go farther in misrepresentation than advertising that relies on the printed word.

## Automobile Tires—Out of Balance

A SUBSCRIBER reports that after spending much time and money having his automobile tires balanced in an effort to correct an unpleasant vibration or rumble at high speed, it was discovered the tires were not truly round. The trouble was finally corrected by having the tires turned to an accurately circular and concentric form on a machine of the lathe type. It

has been said that the out-of-roundness troubles occur mostly with tires of the larger sizes.

CR would appreciate hearing from other subscribers who have had experiences with tires which could not be made to run smoothly by balancing, as to how serious the trouble was and how it was remedied.



## Seven 1954 Automobiles

### Chevrolet

The 1954 models are not very different from last year's models; this, which goes with continuance of long-tried-and-tested features and details is an advantage rather than otherwise, from the consumer's point of view. Although Ford, with its new features, is likely to give Chevrolet still competition this year, the proven trustworthiness of the Chevrolet, freedom from need for frequent small though often troublesome repairs and adjustments, and high turn-in value will appeal to many who want good transportation with a minimum of extras of no particular value or importance.

#### A- (Tentative)

**Chevrolet Two-Ten.** \$1915 delivered N.J. Heater, \$90; radio, \$90.

#### CR'S FINDINGS ON ROAD TESTS

**Speedometer errors:** at indicated speed of 20 m.p.h., actual speed was 20.6 m.p.h.; at 35 m.p.h., 34; at 50 m.p.h., 47. **Odometer** was inaccurate by about 2% (100 miles would be recorded as 102 miles).

**Acceleration times** from 20 to 50 m.p.h., 14.6 sec. (below average); from 40 to 60 m.p.h., 10.7 sec. (average).

**Gasoline mileage under test conditions:**<sup>1</sup> at 30 m.p.h., 25.6 m.p.g.; at 50 m.p.h., 20.0 m.p.g.; both relatively good, and slightly better than obtained with

the 1953 model, which gave 24.6 and 18.4 m.p.g., respectively.

**Riding comfort** was good at low speeds, but at moderate speeds on rough roads the ride was somewhat hard. The car handled easily; steering was precise, and the steering effort satisfactorily low. The car body was adequate as to space.

**Equipment on test car:** Standard transmission, 3.7 to 1 rear axle ratio, heater.

#### OBSERVATIONS AND CONCLUSIONS

The rated horsepower of the engine used on the gear-shift models has been increased from 108 at 3600 rpm. to 115 at 3700 rpm., an increase that has not significantly improved the acceleration. The most noticeable improvement is in the clutch, now very smooth in action. A new and longer muffler is used which is claimed to give better vibration damping and reduced body resonance; actually, on the test car there was more noise in evidence than on the 1953 model. Brake action was very good. The dome light is turned on by opening of either front door or by a switch at the light. The heater was satisfac-

<sup>1</sup>These are not the same figures as miles per gallon under average road conditions; however, the figure for gasoline consumption at 50 m.p.h., if multiplied by 0.8 or 0.9 will often be close to that obtained in normal driving of an automobile.

tory, but somewhat difficult to regulate (its controls were somewhat complicated). Fresh-air intakes are located in a low position at the front of the car where they can pick up exhaust fumes from the car ahead (undesirable). Vision toward both front and rear was very good. The spare tire was readily accessible, and the trunk space adequate. The bottom edge of the trunk opening was almost level with the trunk floor, which helps in loading and unloading. Used desirable single key for ignition, doors, glove compartment, and trunk, and arrangement of switch permits owner to retain the key and still allow parking lot attendant to operate ignition switch and move the car. Some wind noise was noticeable from the ventilator windows when in closed position.

## CHEVROLET TWO-TEN SPECIFICATIONS

### Engine

6 cylinders, valve-in-head  
Bore, 3-9/16 in.; stroke, 3-15/16 in.  
Piston displacement: 235.5 cu. in.  
Brake horsepower (rated): 115 at 3700 rpm. (125 at 4000 rpm. with Powerglide)  
Taxable horsepower: 30.4  
Compression ratio: 7.5 to 1  
Automatic choke  
Crankcase oil capacity: 5 qt.  
Oil filter: not standard equipment  
Cooling system (pressure type): 16 qt. plus 1 qt. for heater

### Chassis, etc.

Wheelbase: 115 in.  
Over-all length: 196-1/2 in.  
Width: 75 in.  
Height: 63 in.  
Gear ratio: 3.7 to 1 (3.55 to 1 with Powerglide)  
Engine revolutions per mile: 2770  
Tires: 6.70 x 15 (overloaded)  
Brake area: 158 sq. in.  
Brake factor:<sup>2</sup> 40  
Frame: Box section  
Minimum road clearance: 7 in.  
Turning diameter: 38 ft.  
Front shoulder room: 55 in.  
Rear shoulder room: 53-3/4 in.  
Steering factor: 4.2 (satisfactory)

### Other details

Battery: 6-volt 100-amp.-hr.  
Gasoline tank: 16 gal.  
Windshield wipers: vacuum type  
Shipping weight: 3230 lb. (3350 with Powerglide)  
Curb weight of car tested: 3385 lb., 53.5% on front (less than average, desirable)

### A- (Tentative)

**Chevrolet Bel Air Powerglide.** \$2147 delivered Pa. Radio, \$70; heater and defroster, \$87; turn indicating lights, \$17.

### CR'S FINDINGS ON ROAD TESTS

**Speedometer errors:** at indicated speed of 20 m.p.h., actual speed was 20.3 m.p.h.; at 35 m.p.h., 32.2; at 50 m.p.h., 45.5; at 60 m.p.h., 55.2. **Odometer** was

inaccurate by about 1½% (100 miles would be recorded as 101.5 miles).

**Acceleration times** were approximately the same as those obtained on the comparable 1953 model; from 0 to 30 m.p.h., 6.9 sec. (good); from 20 to 50 m.p.h., 9.5 sec. (good); from 40 to 60 m.p.h., 10.6 sec. (average).

**Gasoline mileage under test conditions:**<sup>1</sup> at 30 m.p.h., 21.4 m.p.g.; at 50 m.p.h., 17.8 m.p.g.; both fairly good for a car equipped with an automatic transmission, but not as good as obtained on last year's comparable car which gave 23.6 m.p.g. at 30 m.p.h., and 18.7 m.p.g. at 50 m.p.h.

**Riding comfort** (see *Chevrolet Two-Ten*).

**Equipment on test car:** Powerglide transmission, radio, heater, back-up lights, turn signals.

### OBSERVATIONS AND CONCLUSIONS

The rated horsepower of the engine used in the Powerglide models has been increased from 115 at 3600 rpm. to 125 at 4000 rpm. This, however, has not given any improvement in acceleration in speeds up to 60 m.p.h., and gasoline mileage has decreased somewhat. Engine noise level was considered moderate, except when accelerator was depressed (kicked down) so that transmission operated in low. Under this condition, considerable engine noise was present, owing to the high engine speed when operating through the 1.82 to 1 planetary gear. The Powerglide operated satisfactorily. The car was easily started when pushed at as low a speed as 15 m.p.h. with transmission lever in the specified "low" range.

For other comments and specifications, see *Chevrolet Two-Ten*.

## Nash Statesman Custom

CR again finds the Nash a good car for those who desire comfortable transportation and easy handling. Gasoline mileage (with Hydra-Matic) and acceleration are not as good as is available in some other makes at a corresponding price. Depreciation is likely to be high.

### B+ (Tentative)

**Nash Statesman Custom.** \$2362 delivered N.Y.C. Radio, \$98; heater and defroster, \$78; Hydra-Matic transmission, \$179; bed and reclining seats, \$18.50.

### CR'S FINDINGS ON ROAD TESTS

**Speedometer errors:** at indicated speed of 35 m.p.h., actual speed was 36.3 m.p.h.; at 50 m.p.h., 48.5. **Odometer** was inaccurate by about 2% (100 miles would be recorded as 102 miles).

**Acceleration times** from 0 to 30 m.p.h., 6.2 sec., good; from 20 to 50 m.p.h., 13.2 sec., below average; from 40 to 60 m.p.h., 12.6 sec., below average.

**Gasoline mileage under test conditions:**<sup>1</sup> was not good; at 30 m.p.h., 22.2 m.p.g. in "high drive" (in "low drive," 15.4 m.p.g.); at 50 m.p.h., 15.8 m.p.g. in "high drive" (in "low drive," 12.8 m.p.g.).

<sup>1</sup>These are not the same figures as miles per gallon under average road conditions; however, the figure for gasoline consumption at 50 m.p.h., if multiplied by 0.8 or 0.9 will often be close to that obtained in normal driving of an automobile.

<sup>2</sup>A measure not of braking ability, but of brake life expectancy.

**Riding comfort:** was very good (soft but not bouncy) on all types of roads. Cornering ability was good. Car steered as easily as some cars that have power steering. The *Nash* was exceptionally roomy.

**Equipment on test car:** *Hydra-Matic* drive (3.6 to 1 rear axle ratio), radio, heater, *Solex* (tinted) glass. On tinted glass, see August 1952, February and June 1953 BULLETINS

#### OBSERVATIONS AND CONCLUSIONS

In an attempt to improve performance (with some sacrifice in gasoline economy), the manufacturer has raised the engine compression ratio from 7.45 to 1 to 8.5 to 1, and now uses aluminum cylinder heads which make it possible to operate this high-compression engine on regular gasoline. Dual carburetors are standard equipment in all models. For those accustomed to driving cars with high accelerating ability the *Nash* will seem lacking in power and to have relatively poor acceleration; however, for many who place safety above speed and ability to pass trucks and other cars under hazardous conditions, the power plant will be ample, and we believe it will make for safer driving than many cars with power plants in the 160 to 235 hp. brackets. \*The so-called Continental tire mount, which is standard on the *Custom*, is a concession to style at a marked sacrifice to utility. This revival of an old-time arrangement not only increases the over-all length of the car by 10 in., but makes it difficult to load the trunk and requires an extra lock and key to prevent theft. Removal of the tire, when required, is much more troublesome than taking a spare from the usual position in the trunk. \*Visibility, front and rear, was very good; both front fenders are visible to the driver, which makes the car appear to be much wider than it actually is. (*Pontiac* is narrower but by only 1½ in.) Turning radius, large (undesirable). Position of horn ring and lack of stops on doors to hold them open, both criticized by CR on the 1953 model, have been corrected in the 1954 *Nash*. Speedometer, however, is still poorly located to the right of the driver's line of sight. Rubber-padded crash pad on front of dash (an important safety measure). Heater produced ample heat, but the blower was very noisy in high-speed position. Objectionable wind noise from the front left ventilating window when closed, at high driving speeds. Starter is operated by placing the lever of the *Hydra-Matic* drive in neutral and then pulling towards the driver. \*This car like a number of others uses red warning lights in place of an ammeter and pressure gauge to indicate discharging battery and low oil pressure. This method has its advantages for persons who will not watch the instruments on the dashboard other than the speedometer, or do not know the significance of their indications. On the other hand, the warning lights have serious disadvantages for more careful drivers. First, the bulbs may burn out or the circuit to the bulb become open in some way, in which case the driver will believe that the oil pressure and charging are satisfactory when either may be functioning incorrectly. The *Nash* Owner's Manual tries to cover this point by saying that the "No-Charge" indicator

#### NASH STATESMAN CUSTOM SPECIFICATIONS

##### Engine

6 cylinders, "L" head  
Bore, 3-1/8 in.; stroke, 4-1/4 in.  
Piston displacement: 195.6 cu. in.  
Brake horsepower (rated): 110 at 4000 rpm.  
Taxable horsepower: 23.44  
Cylinder head: aluminum  
Compression ratio: 8.5 to 1  
Automatic choke  
Crankcase oil capacity: 4 qt. without filter  
Oil filter: partial-flow type (available as optional equipment)  
Cooling system (pressure type): 15 qt. with heater

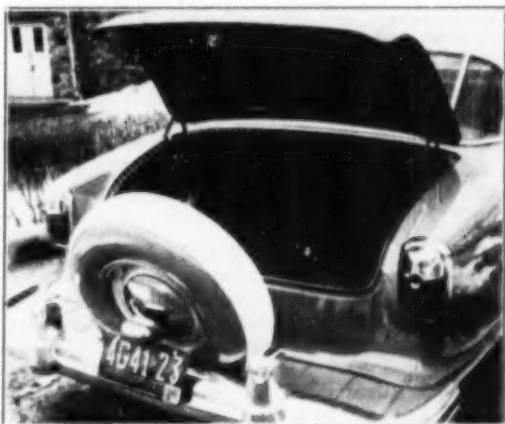
##### Chassis, etc.

Wheelbase: 114-1/4 in.  
Over-all length: 202-1/4 in. (212-1/4 in. with Continental tire mount)  
Width: 78 in.  
Height: 61-3/4 in.  
Gear ratio: 4.4 to 1 (3.6 to 1 with *Hydra-Matic*)  
Engine revolutions per mile: 3290 (2690 with *Hydra-Matic*)  
Tires: G 70 x 15 (adequate)  
Brake area: 150 sq. in.  
Brake factor<sup>2</sup>: 39 (somewhat low)  
Frame: Unit-type frame and body (very good)  
Minimum road clearance: 7-1/2 in.  
Turning diameter: 44 ft. 6 in. (greater than average)  
Front shoulder room: 61-1/2 in.  
Rear shoulder room: 60 in.  
Steering factor: 4.1 (satisfactory)

##### Other details

Battery: 6-volt 100-amp.-hr.  
Gasoline tank: 20 gal.  
Windshield wipers: vacuum type  
Shipping weight: 3070 lb. (without accessories)  
Curb weight of car tested: 3445 lb., 53% on front (less than average, desirable)

\*A measure not of braking ability, but of brake life expectancy.



"Continental" tire mount on *Nash Statesman*. View shows how the tire interferes with loading a large or heavy article into the trunk.

gives its own warning of a burned-out bulb, as it should come on each time the engine is started. That, however, is an unreliable warning, since it is strictly of a negative nature, and requires that the driver be of the sort who would give thought to such detail. In the second place, the observing driver wants to know not only that his battery is charging but at what rate. From this he can often judge the condition of the battery and of the regulator. If either is deficient, it may leave him stranded on a lonely road far from a service station with a dead battery and no lights and no possibility of starting the car. The indicator lights are no adequate substitute for the ammeter and gauge that were formerly used, particularly in view of the fact that in the case of the indicator on the generator circuit the light does not indicate that the battery is being charged, but only that the generator is sending current into the battery; thus the battery may be actually discharging at a substantial rate when by the absence of the red light the indication is that charging is going on (as would be clearly shown by an ammeter in working order). Thus with the battery operating under heavy load (with lights, radio, and heater on), the battery may be running down continuously without any warning to the driver, who will suppose, because the red light is not on, that everything is going properly and the battery is being charged as it should be.

## Pontiac Star Chief DeLuxe

This is a new series apparently intended to provide a car under the Pontiac name sufficiently higher in price that it will not be competitive with the Bel Air, top car in the Chevrolet line. The Star Chief DeLuxe costs about \$100 more than the corresponding model in the Pontiac Chieftain line, and except for its greater length is not significantly different from the 1953 Pontiac Chieftain. Pontiac and Packard are now the only cars using 8-cylinders-in-line engines; in-line 8's are fast becoming outdated.

For those who wish to buy in this price class, this car, with the lower 6.8 to 1 compression ratio, and standard transmission should be satisfactory. CR considers the Star Chief not so desirable when equipped with Hydra-Matic and 7.7 to 1 compression ratio, as it will need premium gasoline, and the engine we think may very possibly require frequent carbon removal as mileage is accumulated.

### B+ (Tentative)

#### Pontiac Star Chief DeLuxe Hydra-Matic. \$2560

delivered N.J. Radio, heater, directional and back-up lights, and rear-view mirror, \$187; Hydra-Matic, \$178; power steering, \$134; electric window operation, \$49.50.

#### CR'S FINDINGS ON ROAD TESTS

**Speedometer errors:** at indicated speed of 20 m.p.h., actual speed was 19.2 m.p.h.; at 35 m.p.h., 33.3; at 50 m.p.h., 47.5. **Odometer** was inaccurate by about 1½% (100 miles would be recorded as 101.5 miles). **Acceleration times** were about average, and acceleration was judged ample for most drivers; from 0 to 30 m.p.h., 5.4 sec.; from 20 to 50 m.p.h., 12.7 sec.; from 40 to 60 m.p.h., 10.2 sec.

**Gasoline mileage under test conditions:**<sup>1</sup> fairly good; at 30 m.p.h. in high drive, 21.6 m.p.g.; at 50 m.p.h.

in high drive, 17.6 m.p.g.; essentially the same as obtained on last year's *Pontiac Chieftain 8*.

**Riding comfort:** Ride was somewhat hard at low speeds, but otherwise satisfactory. The car handled rather well, and cornering ability at high speeds was good. The car body was adequate as to space. Several body rattles were noticed, particularly in the doors.

## PONTIAC STAR CHIEF SPECIFICATIONS

### Engine

8 cylinders, "L" head  
Bore, 3-3/8 in., stroke, 3-3/4 in.  
Piston displacement: 268.4 cu. in.

Brake horsepower (rated): 122 at 3800 rpm. with standard, 127 at 3800 rpm. with Hydra-Matic  
Taxable horsepower: 36.45

Compression ratio: 6.8 to 1 with standard transmission (7.7 to 1 with Hydra-Matic requiring use of high-test gasoline)

### Automatic choke

Crankcase oil capacity: 5 qt.

Oil filter: no exterior filter but has oil cleaner built into crankcase

Cooling system (pressure type): 20.6 qt. with heater

### Chassis, etc.

Wheelbase: 124 in. (2 in. longer than Chieftain series)  
Over-all length: 214 in. (11 in. longer than Chieftain series)

Width: 76.5 in.

Height: 63 in.

Gear ratio: 3.9 to 1 (3.23 to 1 with Hydra-Matic)  
Engine revolutions per mile: 2890 (2390 with Hydra-Matic)

Tires: 7.10 x 15 (overloaded)

Brake area: 171 sq. in.

Brake factor:<sup>2</sup> .38 (low)

Frame: channel section side rails, cross members, and "I" beam "X" members

Minimum road clearance: 6.8 in.

Turning diameter: 42 ft. 10 in. (rather large, undesirable)

Front shoulder room: 55 in.

Rear shoulder room: 54 in.

Steering factor: 4.85 with power steering (somewhat high)

### Other details

Battery: 6-volt 100-amp.-hr.

Gasoline tank: 20 gal.

Windshield wipers: vacuum type

Shipping weight: 3536 without extra equipment

Curb weight of car tested: 4025 lb., 55% on front (average)

**Equipment on test car:** amounted to \$777 extra and included Hydra-Matic with 3.23 to 1 rear axle, power steering, electric window operation, white wall tires, radio, heater, directional signals, back-up lights, rear-view mirror, exhaust deflector, hood ornament, fender shields, E-Z-Eye glass, window washer, foam-

<sup>1</sup>These are not the same figures as miles per gallon under average road conditions; however, the figure for gasoline consumption at 50 m.p.h., if multiplied by 0.8 or 0.9 will often be close to that obtained in normal driving of an automobile.

<sup>2</sup>A measure not of braking ability, but of brake life expectancy.

rubber cushions, air cleaner, bumper wing guard, grille guard, remote control outside mirror, two-tone paint, and undercoating. Power steering, the GM *Hydraulic Steering* made by Saginaw, was satisfactory in that the driver retained the feel of the road, but the response was slow, in that almost the same number of turns of the steering wheel were required as on the models not equipped with power steering. The *Chrysler* type of power steering had a much faster response and in this respect was considered more desirable, but it had the disadvantage of being, in CR's opinion, rather too easy to turn.

#### OBSERVATIONS AND CONCLUSIONS

The rated horsepower of the 8-cylinder engine with *Hydra-Matic* has been increased from 122 at 3600 rpm. to 127 at 3800 rpm. (118 hp. to 122 hp. with standard transmission) chiefly by using a new carburetor and intake manifold. The dome light was turned on by opening either front door or by a switch at the light. Fresh air inlets were located in a low position at front of the car, which is undesirable, as they readily pick up exhaust fumes from the car ahead. (Some manufacturers have corrected this on their 1954 models and provide a fresh-air intake at a better location, at the top of the cowl.) The instrument panel was well arranged and illuminated, but not all of the knobs were identified. The heater and defroster were satisfactory; their controls were simple and easy to operate. The brakes required more than normal pressure to operate. (Power brakes, available as extra equipment, would be an advantage on this car.) The spare tire was readily accessible, and the trunk space was adequate. Electric window lifts were on the front doors only; the ignition key must be turned on in order to permit their being operated. Lack of provision for manual operation of windows could cause great inconvenience, discomfort, even danger, at times. Vision over hood was only fair for a tall person, poor for a short person. Vision to rear was very good. To check *Hydra-Matic* fluid level, front floor mat must be rolled back and floor hole cover removed (very inconvenient).

### Studebaker Champion Regal

In CR's opinion, this is a fairly good car. Outstanding features are its "Continental styling," and good gasoline economy.

B+

**Studebaker Champion Regal.** \$2119 delivered N.Y.C. Radio, \$97; heater, \$60; overdrive, \$105.

#### CR'S FINDINGS ON ROAD TESTS

**Speedometer errors:** at indicated speed of 20 m.p.h., actual speed was 19 m.p.h.; at 35 m.p.h., 32; at 50 m.p.h., 45.3. **Odometer** was inaccurate by about 5% (100 miles would be recorded as 105 miles).

**Acceleration times** from 20 to 50 m.p.h., 15.1 sec.; from 40 to 60 m.p.h., 13.3 sec.; both below average.

**Gasoline mileage under test conditions:**<sup>1</sup> at 30 m.p.h., overdrive out, 22.7 m.p.g. (overdrive in, 27.0 m.p.g.);

at 50 m.p.h., overdrive out, 19.1 m.p.g. (overdrive in, 23.2 m.p.g.); both good. When equipped with the standard 4.1 to 1 rear axle ratio, this car should give about 24.1 m.p.g. at 30 m.p.h., 20.4 m.p.g. at 50 m.p.h.

**Riding comfort** is improved over that of the 1953 models and is considered good. Handled well on curves, and the steering was easy. While the 1954 *Champion* does not have the slightly "tinny" quality some felt last year's car had, it would be greatly improved if it were better soundproofed.

**Equipment on test car:** Overdrive with 4.56 to 1 rear axle (over-all ratio, 3.19 to 1), hill holder, radio, heater and defroster, directional signals, back-up lights, tinted glass.

### STUDEBAKER CHAMPION REGAL SPECIFICATIONS

#### Engine

6 cylinders, "L" head  
Bore, 3 in.; stroke, 4 in.  
Piston displacement: 170 cu. in.  
Brake horsepower (rated): 85 at 4000 rpm.  
Taxable horsepower: 21.6  
Cylinder head: cast iron  
Compression ratio: 7.5 to 1  
Automatic choke  
Crankcase oil capacity: 5 qt.  
Oil filter: partial-flow type  
Cooling system (pressure type): 11.5 qt. with heater

#### Chassis, etc.

Wheelbase: 116-1/2 in.  
Over-all length: 199 in.  
Width: 71 in.  
Height: 59-3/4 in.  
Gear ratio: 4.1 to 1 (with overdrive, 4.56 to 1, with automatic transmission, 4.1 to 1)  
Engine revolutions per mile: 3150 (2450 with overdrive)  
Tires: 6.40 x 15  
Brake area: 147 sq. in.  
Brake factor:<sup>2</sup> 42  
Frame: Box section with 5 cross members  
Minimum road clearance: 6-13/16 in.  
Turning diameter: 39 ft. 6 in.  
Front shoulder room: 55-1/4 in.  
Rear shoulder room: 54-1/2 in.  
Steering factor: 3.9 (satisfactory)

#### Other details

Battery: 6-volt 100-amp.-hr.  
Gasoline tank: 18 gal.  
Windshield wipers: vacuum type  
Shipping weight: 2770 lb.  
Curb weight of car tested: 3054 lb., 54% on front (about normal)

#### OBSERVATIONS AND CONCLUSIONS

Improvements on the 1954 models consist of new and larger self-energizing brakes (last year's brakes were criticized by CR as being below average in performance). Compression ratio has been increased

<sup>1</sup>These are not the same figures as miles per gallon under average road conditions; however, the figure for gasoline consumption at 50 m.p.h., if multiplied by 0.8 or 0.9 will often be close to that obtained in normal driving of an automobile.

<sup>2</sup>A measure not of braking ability, but of brake life expectancy.

from 7.0 to 1 to 7.5 to 1, and the interior styling has been improved. While the engine power is low by today's standards, the car had ample power for normal driving, even in overdrive; in climbing long hills there was some falling off in speed, but this was not considered objectionable, particularly since this is a necessary price to pay for good gasoline mileage in a car in this price and size class. Brake and clutch pedals were located too close together and too far to the left of the driver. The car had ample room in front, but leg room in the rear when the front seat was pushed back to its limit was somewhat cramped. The top of the frame of the rear window was a hazard for tall persons who could receive a nasty bump on the head from a bad bounce or when pitching backward after a sudden stop. The interior light turned on by opening of either front door or by a switch when the doors are closed. The starter was located under the clutch pedal. The instrument panel was well arranged, instruments legible and well lighted. Visibility of the road, front and rear, excellent (best of any car so far reported). Fresh-air intake for heater located in the side of right front fender; it was only partly screened against entrance of insects. The hood was not counterbalanced, and was heavy to lift. The spare tire was readily accessible; trunk space was adequate. Gearshift lever was not horizontal, as it should be, when gears were in neutral.

## Station Wagons

*Formal ratings will not be assigned to station wagons until more have been tested so that comparisons of their various features can be made.*

**Chevrolet Handyman 210.** \$2259 delivered Pa. *Powerglide*, \$181; heater, \$86; radio, \$70. A 4-door steel body station wagon with two seats, for six passengers (five and driver).

**Riding comfort:** This vehicle gave a good ride on rough road surface, but not as good as the *Plymouth Plaza Suburban*. Steering was precise but effort was slightly greater than that required with *Chevrolet Bel Air*.

### OBSERVATIONS AND CONCLUSIONS

Engine noises were moderate, but greater than in the passenger car, possibly due to lower sound-absorbing properties of the interior. No exhaust odors were observed when driving this "car" with hinged section forming rear window in raised position. The tailpipe discharged exhaust gases into the slipstream of left rear wheel. The interior appointments are considered good. Plastic material is used throughout except for wheel housing surfaces, which were painted. The deck and inside of tail gate are covered with a linoleum-type material which it is believed should stand up under wear. A single overhead light with manual switch at light, and automatic switch on left-front door only, is provided. No armrests or ash tray are provided for the rear-seat passengers. The movable windows are retractable vertically as in typical 4-door automobiles. The rear window is provided with a single T-handle for

convenient operation from outside the car. There was also an inside handle so that the window could be opened from the inside (a desirable emergency provision). The tail gate had two recessed latch handles which called for simultaneous use of two hands. Spare tire and tools were located under the rear deck, and access to these was the same as with the *Pontiac Station Wagon*. No difficulty in jacking up the car was noted. The rear seat folded forward easily whenever added deck area was required (the back portion of the rear seat becomes part of the floor). The luggage space was somewhat larger than that of the *Plymouth Plaza Suburban*.

## CHEVROLET HANDYMAN 210 SPECIFICATIONS

### Engine

*See Chevrolet Two-Ten*

### Chassis, etc.

*Over-all length: 198-1/4 in.*

*Width: 75 in.*

*Rear axle ratio: 3.71 to 1 (3.55 to 1 with Power-glide)*

*See also Chevrolet Two-Ten*

### Dimensions of luggage space

*Usable width (wheel housing): 45 in.*

*Depth from back of rear seat to closed tail gate: 38-3/4 in.*

*Depth from back of front seat (rear seat folded down to closed tail gate): 69 in.*

*Average interior height: 41 in.*

*Rear deck opening height: 35 in.*

*Rear deck opening width: 47-3/4 in.*

### Other details

*Shipping weight: 3470 lb.*

*Curb weight: 3790 lb.—50.5% on front wheels*

## PONTIAC CHIEFTAIN 8 SPECIAL STATION WAGON. \$2605

delivered Pa. *Hydra-Matic*, \$178; radio, \$80; heater, \$81; power brakes, \$35.50. A four-door steel station wagon with three seats for 8 passengers (7 and driver).

**Riding comfort** on rough roads was not as good as with the *Plymouth Suburban*. The steering was precise and the effort required to turn the steering wheel was low (the car tested was not equipped with power steering).

### OBSERVATIONS AND CONCLUSIONS

The power brakes employed on this vehicle worked as well as most of the few power brakes that have been on cars tested so far. The brake pedal is supported at the steering column and at a lower location than the conventional *Pontiac* brake pedal. Very small foot movement and pedal effort were required. Engine noise level was very low, no doubt due to the low rear axle ratio (3.08 to 1) employed. The low axle ratio favors good gasoline economy and quiet engine operation. Considering the weight of the vehicle, especially if it is to be used rather fully loaded at times, a higher axle ratio will be considered

desirable by many. The two rear seats are removable by removing wing nuts which clamp the seats to the deck; this is not as convenient as the fold-down type seat used on the other *Pontiac* two-seat "Special" model. (However, the latter arrangement gives only a 6-passenger capacity.) The rear seat of the station wagon tested did not provide adequate head and leg room (distance from rear of middle seat back rest to front of rear seat cushion is approximately 10 in., and height of rear floor section reduced headroom). Access into rear seating space was considered good (about equal to four-door sedans). A narrow aisle permits access to rear seat. The middle seat is ample for two passengers. Means of exit from this car in case of emergency are as good as with most four-door sedans. Upholstery material used for seats and sides is a plastic, simulating leather. Ceiling was fabric, similar to that widely used on passenger cars. Windows at the four doors are of the conventional retractable type. The extreme rear windows were of the sliding type, and were sometimes difficult to latch. One latch on the vehicle tested permitted window to slide forward sufficiently to cause slight whistling air noise; the other latch did not lock until several strong efforts were made. A single overhead light with a manual switch at the light, and automatic switches on the front doors, provides adequate lighting of the interior. The latches for the tail gate were recessed into the tail gate; they operated smoothly. While this recessed design permits more luggage space, it is necessary to operate both latches simultaneously, as on the *Chevrolet*, in order to drop the tail gate. Spare tire and tools are located under the rear deck, and accessibility is fair when rear seat is in place. When the vehicle was operated with the rear window in the raised

position, no exhaust odors were evident. The exhaust tail pipe discharges into the slipstream of the left rear wheel. In general, this car should appeal to people desiring primarily an 8-passenger car with the possibility of using the entire space behind the front seat for luggage or sleeping accommodations, when desired. With this type of station wagon, when maximum luggage space is desired, both rear seats must be removed and stored in the garage or elsewhere, which may often be inconvenient.

### PONTIAC CHIEFTAIN 8 SPECIAL SPECIFICATIONS

#### Engine

*See Pontiac Star Chief*

#### Chassis, etc.

*Over-all length: 205 in.*

*See Pontiac Star Chief*

*Tires: 7.10 x 15, 6-ply*

#### Dimensions of luggage space

*Usable width (wheel housing): 45-3/4 in.*

*Depth from back of front seat to raised tail gate  
(both rear seats removed): 73-3/4 in.*

*Depth from back of middle seat to raised tail gate  
(rear seat removed): 38-1/4 in.*

*Average interior height at rear deck: 42 in.*

*Average interior height at front deck: 45-1/4 in.*

*Rear deck opening height: 34 in.*

*Rear deck opening width: 48 in.*

#### Other details

*Gasoline tank: 16 gal.*

*Shipping weight: 3881 lb. (with standard transmission)*

*Curb weight: 4100 lb. (with radio, heater, and Hydra-Matic) — 51.5% on front wheels*

## "3 in 1" Paintbrush

**A**N innovation in the painting field is the *Baker "3 in 1"* paintbrush (\$3.95), advertised by a District of Columbia department store. This consists of a detachable handle and two individual brush units, one  $2\frac{1}{2}$  inches wide and one  $1\frac{1}{2}$  inches wide. This combination brush is manufactured by Baker Brush Co., Inc., N.Y.C. The two parts can be used separately as a  $2\frac{1}{2}$ -inch varnish brush and a  $1\frac{1}{2}$ -inch sash brush, or combined into a single unit to make a 4-inch wall brush. At first glance this seems to be an excellent idea for the home owner who would expect to be able to reduce considerably his outlay for paintbrushes.

The chief difficulty with the idea of a brush in two parts for use as separate units and at other times linked together is that paintbrushes gradually wear away in use, and for good work

the wear should be even on all parts of the brush. Let us assume that in the household the sash brush gets more service than the varnish brush. After a time when the two are put together to paint a wall, the sash brush part will be shorter than the varnish brush part. Hence the wall brush, made when the two are put together, will be uneven in bristle length and in capacity for holding paint. The result will be uneven brush strokes and uneven thickness of the coat of paint applied, or considerable loss of time in extra brushing required to make up for the uneven character of the brush.

Another disadvantage is that the bristles of the "*3 in 1*" brush are short, only  $2\frac{1}{2}$  inches. Even a good sash brush normally has longer bristles than that, and for a wall brush of 4-inch width, the bristles would be exceedingly short,



## Which Tooth Paste to Use— Pay Your Money and Take Your Choice

**I**F the extravagant claims made for a wide variety of tooth pastes over the past 10 or 15 years really had any basis in fact, it is obvious that this class of product would rate as one of the seven wonders of the world. Lest this generation should get the idea that there is something new about asserted miracle-working properties for tooth paste currently available, we would point out that claims for marvelous and unprecedented results from the use of various brands of dentifrices have been with us for many years. Nearly 30 years ago, "mucin plaques," described as the source of most tooth troubles, were supposedly remedied by using *Pepsodent*. Some years later *Colgate's* claimed to be a tooth paste containing a cleansing foam that was "the greatest cleansing agent known to man, in a special, mild, effective form." We should not forget to mention "Irium" which was claimed to have special cleansing properties in *Pepsodent* at a later date and "Ziratol" in *Ipana* which was sold to eliminate "pink toothbrush." All of which appeals served to sell tooth paste in their day, but are now coming to be superseded by bigger and better and more "scientific" advertising claims evolved by the busy and articulate admen.

At this point it may be noted that, after giving the subject considerable study, the Council on

Dental Therapeutics of the American Dental Association has come to the conclusion that it is the toothbrush rather than the dentifrice that accomplishes the desired purpose of keeping the teeth clean and free from food particles. The A.D.A. has taken the position that the commercial dentifrices currently on the market have no therapeutic value and are at best merely useful aids in polishing tooth surfaces. It is even suggested that a moist toothbrush may best serve the purpose, although some people like the addition of a pleasing flavor to lighten the chore of brushing the teeth. The A.D.A.'s Council on Dental Therapeutics in 1947 ended its earlier custom of listing brands of approved tooth paste and adopted a ruling that acceptance for the A.D.A.-approved list would be granted only to those dentifrices which had demonstrated therapeutic properties.

The causes of dental caries or tooth decay have been the subject of intensive research for many years. According to one view, it is a disease of the calcified tissues of the teeth caused by acids resulting from the action of micro-organisms on carbohydrates. It is characterized by a decalcification of the inorganic portion of the teeth and is followed by a disintegration of the organic substance. One theory holds that the chief organism associated with tooth decay

is lactobacillus, although it is recognized that other factors enter into the picture, including natural immunity and resistance, diet, and oral hygiene. One generally accepted health measure is that the teeth should be brushed *immediately after eating* in order to eliminate the food particles that cause fermentation and foster growth of bacilli or bacteria. It is considered desirable to permit the toothbrush to dry out thoroughly before it is used again, hence there is a need to have several on hand to permit their being used in rotation.

Experiments have been conducted with various substances designed to suppress or retard the acid-forming bacteria by incorporating these substances in the dentifrice used. Although it could be obtained only on prescription, a tooth paste containing penicillin was used in several experiments that showed promise, but routine application of this antibiotic was frowned on as having the potentiality of sensitizing the user so that it would be impossible to use the drug in a disease condition or serious illness when life might be at stake.

The idea, however, of incorporating some "miracle" drug in a dentifrice has presented the hitherto cosmetic-minded industry with dazzling sales prospects. It is well known that U.S. consumers are exceedingly health-minded, and the lure of using a tooth paste to eliminate tooth decay, and to avoid the pain and expense of going to the dentist, is decidedly appealing. Effective, too, as advertising claims is the promise of eliminating bad breath from smoking and the "morning-after" taste through use of some particular tooth paste.

In 1952 an advertising journal reported that a survey made in 1948 indicated there were approximately 150 brands of tooth paste on the market. In addition to "regular" tooth pastes, which were shown to constitute the largest percentage sold, there was a substantial volume of sales of ammoniated tooth pastes, and a small percentage of tooth pastes contained chlorophyll, which was just then appearing on the market. Ammoniated tooth pastes were widely featured in 1949, penicillin in prescription products the following year, and chlorophyll in 1951.

The ammoniated dentifrices based on combinations of urea and urease have been featured under a group of licenses issued by the University of Illinois. It is generally agreed (except by advertising copywriters) that more evidence is needed before it can be established with any certainty that there is a reduction of tooth decay by use of ammoniated dentifrices, and they have somewhat declined in popularity.

As for chlorophyll, although dentifrices con-

taining it have appeared on the market in considerable number, the American Dental Association has taken the position that the evidence in its behalf is so limited or inconclusive that dentifrices containing it cannot be correctly evaluated at the present time. Primarily the claim of chlorophyll to consumer acceptance is its alleged deodorizing property. Whereas in earlier days "pink toothbrush" was an advertised malady, to be remedied by using a particular dentifrice, one present-day objection to some of the chlorophyll tooth pastes is that some cause "green toothbrush" and leave a green stain on other articles with which they come in contact. In any event, the alleged deodorizing properties of chlorophyll in tooth paste are a subject of continuing controversy and are considered "not proven" at the present time.

The newest wonder workers in the dentifrice field are the so-called anti-enzyme tooth pastes that are currently the theme of extensive advertising. The ingredients called anti-enzymes are designed to counteract the bacteria that generate acids which cause tooth decay, particularly after the eating of sugars and starches. The two substances which have been approved by the Food and Drug Administration as safe for use in dentifrices are sodium dehydroacetate and sodium N-lauroyl sarcosinate. These two particular anti-enzymes were selected by tooth-paste manufacturers as the result of researches carried out over a period of three years involving examination of some 400 anti-enzymes by Dr. Leonard S. Fosdick at Northwestern University, in Illinois. Listerine is currently marketing an anti-enzyme tooth paste containing sodium dehydroacetate; Colgate has one on the market containing sodium N-lauroyl sarcosinate. It is interesting, however, to contrast the advertising for these products with the comment made by Dr. Fosdick, who carried out the basic studies in the field. At a meeting of the American Dental Association last fall, Dr. Fosdick pointed out: "During the past 10 years, the American public has been led to believe that by brushing the teeth with various types of preparations, dental caries could be prevented. Unfortunately, the expectations as aroused by clever advertising have not been fulfilled. . . . Actually, clinical experiments of this type are now under way, but as yet no information is available to indicate the effectiveness of these compounds against clinical caries [decay as it actually occurs in human teeth]."

The Journal of the American Dental Association points out that the claims that anti-enzyme tooth pastes will prevent dental decay are unwarranted and that there is no acceptable evi-

**Tooth Paste on a Cost-per-Ounce Basis**

| <i>Brand</i> | <i>Type</i>                                   | <i>Marked Size</i> | <i>Marked Weight, ounces</i> | <i>Price</i> | <i>Cost per Ounce Based on Claimed Weights</i> | <i>CR's Price Rating (1 = low, 3 = high)</i> |
|--------------|---|--------------------|------------------------------|--------------|--|--|
| Amm-i-dent   | Ammoniated with Chlorophyll                   | —                  | 2 at 2.2, or 4.4 total       | 2 for 59c    | 13.4c  | 1  |
| Amm-i-dent   | Ammoniated                                    | Economy            | 4.75                         | 69c          | 14.5c  | 1  |
| Amm-i-dent   | Ammoniated with Chlorophyll                   | Economy            | 4.75                         | 69c          | 14.5c  | 1  |
| Amm-i-dent   | Ammoniated                                    | —                  | 2.7                          | 53c          | 19.6c  | 2  |
| Amm-i-dent   | Ammoniated with Chlorophyll                   | Large              | 2.7                          | 53c          | 19.6c  | 2  |
| Amm-i-dent   | Ammoniated                                    | —                  | 1.3                          | 27c          | 20.8c  | 3  |
| Amurol       | Ammoniated                                    | —                  | 4.75                         | 69c          | 14.5c  | 1  |
| Amurol       | Ammoniated                                    | Large              | 2.5                          | 49c          | 19.6c  | 2  |
| Chlorodent   | Chlorophyll                                   | Economy            | 5.0                          | 89c          | 17.8c  | 2  |
| Chlorodent   | Chlorophyll                                   | Giant              | 3.25                         | 69c          | 21.2c  | 3  |
| Chlorodent   | Chlorophyll                                   | Large              | 1.75                         | 43c          | 24.6c  | 3  |
| Colgate      | Regular with Gardol                           | Economy            | 5.0                          | 63c          | 12.6c  | 1  |
| Colgate      | Regular with Gardol                           | Giant              | 3.25                         | 47c          | 14.5c  | 1  |
| Colgate      | Regular with Gardol                           | Large              | 1.75                         | 27c          | 15.4c  | 2  |
| Colgate      | Regular with Gardol                           | Small              | 0.85                         | 15c          | 17.6c  | 2  |
| Colgate      | Chlorophyll                                   | Economy            | 5.0                          | 89c          | 17.8c  | 2  |
| Colgate      | Chlorophyll                                   | Giant              | 3.25                         | 69c          | 21.2c  | 3  |
| Colgate      | Chlorophyll                                   | Large              | 1.75                         | 43c          | 24.6c  | 3  |
| Craig Martin | with magnesium hydroxide and milk of magnesia | —                  | 4.0                          | 39c          | 9.8c   | 1  |
| Craig Martin | Ammoniated                                    | Economy            | 5.0                          | 64c          | 12.8c  | 1  |
| Craig Martin | with magnesium hydroxide and milk of magnesia | —                  | 1.0                          | 15c          | 15.0c  | 1  |
| Craig Martin | Ammoniated                                    | —                  | 3.0                          | 49c          | 16.3c  | 2  |
| Forhan's     | Regular                                       | Large              | 3.125                        | 47c          | 15.0c  | 1  |
| Forhan's     | Regular                                       | Medium             | 1.5                          | 25c          | 16.7c  | 2  |
| Iodent       | No. 2 for Smokers                             | Large              | 3.6                          | 47c          | 13.1c  | 1  |
| Iodent       | No. 1 for non-smokers and young people        | Large              | 3.1                          | 47c          | 15.2c  | 2  |
| Ipana        | Regular                                       | Economy            | 4.2                          | 63c          | 15.0c  | 1  |
| Ipana        | Regular                                       | Giant              | 2.6                          | 47c          | 18.1c  | 2  |
| Ipana        | Regular                                       | Guest              | 0.52                         | 10c          | 19.2c  | 2  |
| Ipana        | Ammoniated Chlorophyll                        | Giant              | 2.6                          | 63c          | 24.2c  | 3  |
| Ipana        | Regular                                       | Medium             | 1.3                          | 27c          | 20.8c  | 3  |

**Tooth Paste on a Cost-per-Ounce Basis (Continued)**

| <i>Brand</i> | <i>Type</i>            | <i>Marked Size</i> | <i>Marked Weight, ounces</i> | <i>Price</i>  | <i>Cost per Ounce Based on Claimed Weights</i> | <i>CR's Price Rating (1 = low, 3 = high)</i> |
|--------------|------------------------|--------------------|------------------------------|---------------|--|--|
| Ipana        | Ammoniated Chlorophyll | Large              | 1.3                          | 39c           | 30.0c  | 3  |
| Kolynos      | Regular                | Giant Economy      | 4.2                          | 63c           | 15.0c  | 1  |
| Kolynos      | Regular                | Large              | 2.8                          | 47c           | 16.8c  | 2  |
| Kolynos      | Regular                | Medium             | 1.0                          | 27c           | 27.0c  | 3  |
| Listerine    | Antizyme               | Giant              | 3.3                          | 59c           | 17.9c  | 2  |
| Lyons        | Regular                | —                  | 2.875                        | 43c*<br>50c** | 14.9c<br>17.4c                                 | 1<br>2                                       |
| Lyons        | Regular                | —                  | 1.375                        | 23c*<br>25c** | 16.7c<br>18.2c                                 | 2<br>2                                       |
| Pepsodent    | Regular with Irium     | Economy            | 5.0                          | 69c           | 13.8c  | 1  |
| Pepsodent    | Regular with Irium     | Giant              | 3.25                         | 47c           | 14.5c  | 1  |
| Pepsodent    | Regular with Irium     | Large              | 1.75                         | 27c           | 15.4c  | 2  |
| Phillips     | Milk of Magnesia       | Economy            | 5.5                          | 59c*<br>75c** | 10.7c<br>13.6c                                 | 1<br>1                                       |
| Phillips     | Milk of Magnesia       | Large              | 3.5                          | 47c*<br>50c** | 13.4c<br>14.3c                                 | 1<br>1                                       |
| Phillips     | Milk of Magnesia       | Medium             | 1.7                          | 23c*<br>25c** | 13.5c<br>14.7c                                 | 1<br>1                                       |
| Squibbs      | Regular                | Economy            | 4.5                          | 63c           | 14.0c  | 1  |
| Squibbs      | Regular                | Large              | 3.0                          | 47c           | 15.7c  | 2  |
| Squibbs      | Regular                | Medium             | 1.5                          | 29c           | 19.3c  | 2  |

\*store selling price

\*\*manufacturer's price printed on box

dence at present demonstrating that the daily use of such a dentifrice will prevent tooth decay. Indeed, on the basis of recent research at the School of Dentistry, Georgetown University, the Journal quite forthrightly declared: "the anticariogenic (tooth decay prevention) miracle promised for the anti-enzyme dentifrices may well turn out to be not a miracle but a mirage." The Journal singled out advertising which promised "lifetime protection against tooth decay" as one of the most blatant examples of "miracle claims."

As a matter of fact, tooth-paste advertising on the whole has become so increasingly exaggerated that the Journal, noting that in the past none of the miracle tooth pastes and powders have lived up to the promises offered for them, pointed out "many of these super claims are on the same low

level as those made for discredited cancer cures and arthritis remedies."

In view of the decided stand taken by dental researchers that the proper use of the toothbrush is more effective for dental health than any particular substance in a dentifrice, the thrifty-minded consumer will do well to save the money he might spend on this class of product for something else that he needs. If on the other hand he prefers to have his toothbrush flavored by the addition of some pleasant-tasting substance, he may well choose his tooth paste on the basis of price. The least expensive will serve quite well enough, providing it pleases his taste and does not irritate his gums and mouth.

Very little has been done to discover just what substances in tooth pastes are the cause of irri-

tation, yet a number of people find that some flavors such as cinnamon oil and other ingredients of some brands of tooth paste are definitely irritating. One case has also been reported of irritation caused by artificial cinnamon. The compound G-4 or "dichlorophene" in a popular ammoniated tooth paste has been held responsible for severe irritation of the lips and mouth. There is, so far as we know, at the present time no practical method for determining in advance of use just what substances will cause irritation.

For those who do not have any special

problems of sensitivity of gums or other oral tissues, we offer a simple guide for evaluating the well-known tooth pastes currently on the market on a price basis. The prices listed are those actually paid for the brands purchased by a member of CR's staff at various drugstores in the East during the fall of 1953. Tooth paste, it is noted, is frequently a "loss leader," sold at a cut price to bring customers into a store; it may be possible, therefore, to get a better bargain on some brands than was available at the time and place CR's purchases were made.

## Abridged Cumulative Index of Previous 1954 Consumers' Research Bulletins

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| <b>Automobiles</b>             |                  |      | <b>Editorial</b>                    | each issue  | page 2 | <b>Pumps, shallow-well, for home</b>                  |             |      |
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| Diseases, preventive methods   |                  |      | silver†                             | Feb., 19-23 |        | <b>Vegetables, frozen, salt-brine</b>                 |             |      |
| and treatment, results         | Jan., 4          |      | Pot cleaner and scour cloth†        | Feb., 34    |        | processed, labeling                                   | Feb., 4     |      |
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| Drills, hand, electric.        | Feb., 5-9        |      |                                     |             |        | <b>included.</b>                                      |             |      |

**Vegetables, frozen, salt-brine  
processed, labeling**

## **Corrections and Emendations to Consumers' Research Monthly Bulletins**

**Minit-On  
Tire Chains  
Page 26  
Dec. '53 Bulletin**

Subscribers who live in localities where tire chains will at times need to be used over snow tires should note that the manufac-

should note that the manufacturer of *Minit-On* tire chains does not recommend their use on snow tires. A set of 6.70 x 15 *Minit-On* chains was found to be about 2 inches too short when applied to recapped 6.70 x 15 snow tires. It should be noted that likewise with the regular type of chains, it might in some cases be necessary to purchase

the *next size larger* chains for a tire which has been recapped, or which for some other reason is unusually large in circumference for a given nominal size.

**Vacuum Cleaners**  
**Page 13**  
**Oct. '53 Bulletin**

The Eureka-Williams Corp. has informed CR that the suggested retail price of the disposable paper bags used in their *Model 800* canister cleaner is 6 for \$1. (The price of 25 cents each given in the listing was the figure supplied by a Eureka dealer.)

## Choice of Water Piping for the Home

THE CHOICE of material for water piping to be used in the home should be made with care, for the useful life of the pipes and the initial and long-run costs of the installation will depend upon the type of piping chosen. The decision may in some instances directly affect the health of members of the family, a fact which is little appreciated by most consumers. Pipes of the wrong material can introduce unwholesome or poisonous metallic salts into the water, or they may corrode so rapidly as to have an unreasonably short life, as well as to reduce the water flow to an annoying extent, as the inside of the pipe becomes filled up with rust and other incrusting material. The hardness of the water is a basic element in the piping problem, too; hard waters are much less corrosive than soft waters and the use of a water softener will greatly increase difficulties with corrosion. Iron or steel piping may do for a given installation with hard water, yet if the water is softened red brass or copper will be required. Even then, one may run into trouble if the water is softened to zero hardness. High sodium bicarbonate, often present in the softened water (when the water was high in carbonate hardness), releases carbon dioxide in hot-water lines. This is strongly corrosive to both ferrous and non-ferrous materials. The most practical procedure will as a rule be not to soften the water to zero hardness but to leave some calcium and magnesium hardness in the water to help protect the piping from attack. This applies to copper as well as steel, and especially so to lead piping whose use may result in a serious health hazard due to increased solubility of lead corrosion products in soft water as compared with hard water. Yellow brass deteriorates slowly in soft water by a form of corrosion in which the alloyed zinc forms soluble products, leaving behind a porous residue of copper. Red brass is preferred to yellow brass in soft-water areas and where water is softened because dezincification takes place at a much slower rate in red brass. (Pipe which has been dezincified may burst suddenly; another difficulty is that the separation of threaded joints may be rendered impossible.)

The water used for drinking, cooking, laundering, bathing, and other household purposes



*Sections of corroded and partially plugged galvanized iron pipe and fitting after about seven years of use in a hot-water line, with relatively soft water.*

corrodes all of the materials commonly used for piping. The extent of this corrosion depends not only on the material of the pipe itself but on the nature of the substances that were dissolved in the water in its passage over and through the soil. The character of the water depends upon whether the source is a spring, a stream, or a well, and the part of the country in which these water sources are found. The factors that chiefly determine the corrosiveness of natural water supplies are dissolved oxygen, dissolved carbon dioxide, and dissolved salts. The water most corrosive to piping is soft water such as is found in Vermont, New Hampshire, some large cities, and in various areas of the Pacific Northwest.

Ground water often contains enough carbon dioxide to have an acid reaction. Water which has been in contact with decomposed vegetable matter in the woods and in streams or ponds will also often be somewhat corrosive. Very soft waters are usually slightly on the acid side and, as has been noted, are usually much more corrosive to metals than hard or slightly alkaline water.

One factor tending greatly to increase corrosion in hot-water systems, where the electrical conductivity of the water is somewhat greater than in cold-water systems, is the presence in the piping system of more than one metal or alloy. At places where two dissimilar metals are joined, strong electrolytic (electric battery) effects occur which greatly hasten corrosive breakdown of pipes, pipe joints, fittings, valves, or tanks. In some cases it is impossible to avoid the use, perhaps, of a copper-galvanized-iron combination, but it must be always remembered

that when this is done there will be an increased risk of damage by corrosion and greater likelihood of a leaking pipe, plug, or joint. (In cold-water systems, the type of corrosion referred to usually does not present a serious problem.) Small amounts of copper salts are picked up when soft water passes through copper pipe; this copper may be precipitated into a galvanized hot-water tank or in galvanized iron piping that follows the copper pipe. As a result, corrosion of the zinc-covered iron or the iron itself will be accelerated whether there is direct metallic contact or not with copper.

When the water is high in calcium and magnesium, as hard waters often are, the water will usually deposit a coating or crust inside the pipes which tends to protect them from corrosion. Sodium silicate is often added to water by a feeding device in the home to reduce rusting and dezincification. Although addition of silicate to drinking water is supposed to be harmless from the health standpoint, we are not in a position to say that this is assuredly the case. There can be no doubt of the undesirability of drinking phosphates, sometimes added to water supplies by feeding devices. Where any chemical substance, particularly a phosphate, is fed into the water in this way, or in softening water (see discussion in CR's BULLETIN, February 1953, page 29), water for drinking and cooking should be taken from special piping that comes off the supply pipe before the chemical treating material is added.

The incrustation, consisting essentially of calcium carbonate, which builds up within a rusted pipe and helps protect it from corrosion, will, under some conditions, grow to a point where it may impede the flow to a serious extent. This is particularly true of the hot-water piping, where the deposition of the coating takes place rapidly. There may, in addition, be precipitation of calcium sulfate and magnesium salts which will lead to incrustation and plugging of the pipe. If the water is of the sort that has this effect, which can be readily determined by inquiry of the local water department or through neighbors' or one's own experience in the locality, the pipe installed should be much larger than would be needful originally, in order to allow for the progressive loss of effective bore diameter of the pipe as the incrustations are formed. This is an important point, and the useful life of a piping installation can often be greatly extended without undue loss of pressure at the faucets if the piping is considerably "oversized" at the beginning.

Carbon dioxide in the water tends to keep the calcium carbonate in solution but, if there

is an excess of carbon dioxide present, this will interfere with the protective film and so promote corrosion. Hardness due to calcium sulfate does not help protect the pipe, though it does cause incrustation. Dissolved oxygen, like too much dissolved carbon dioxide, adds to the "aggressiveness" of the water and causes corrosion. Acidic waters having a pH below 7 (which represents chemical neutrality) often tend to promote corrosion. Natural waters usually have pH values between 6.5 and 8.5, but in regions where the water is very soft and at the same time drawn directly from a well or spring, or some types of streams, some acidity is likely to be present.

The materials and alloys used for water piping are broadly classed as (1) ferrous, which includes cast iron (used in street mains), wrought iron, and steel; (2) non-ferrous, which includes copper, red brass, yellow brass, and lead. There is a third class now becoming important called plastic piping; not much is yet known about plastic piping with respect to permanence and safety from the standpoint of assured freedom from harm to those who drink the water which passes through it and might be contaminated by it. Research is being done at a mid-western university on various problems raised by the widespread adoption of plastic piping which is expected to occur in the reasonably near future. Such piping has great advantages in many uses because of its lightness and flexibility, its ability to stand a reasonable amount of freezing without failure, and the ease with which connections can be made when the proper tools and equipment are available. Aluminum piping tends to corrode fairly rapidly, and the stainless steels are subject to a pitting type of attack on long contact with hot water, particularly water containing chloride ions.

Whenever "red water" or red stains are found on porcelain-enamel surfaces, it is certain that destructive corrosion is occurring somewhere in the water supply system. However, the origin of the red water may be, and often is, in corrosion taking place in the street mains. Hard or alkaline waters have little or no tendency toward becoming red; soft or acidic waters attack steel and iron readily. The small amounts of iron in red water are not harmful to health, though the life of the pipes may be greatly shortened by the corrosion of which the "red water" gives evidence. A type of rusting which is particularly destructive to piping and brings about a rapid clogging of the flow channel is known as tuberculation, in which each minute pit of corrosion is surrounded by an insoluble tubercle (a small knob-like excrescence) of ferric

hydroxide which eventually grows to many times the size of the underlying cavity. With this type of corrosion, there is, so to speak, a constant race between the complete stoppage or "plugging up" of the pipe fittings and their failure through leakage.

While non-ferrous materials are less subject to corrosion than plain or galvanized steel or iron, they are far from completely corrosion-resistant. Particularly is this true of brass, which in some regions gives serious trouble with failures because of the zinc being dissolved out of the alloy where the water is aggressive, called dezincification, as already explained. One great advantage of the non-ferrous materials is that the corrosion rate is less and the corrosion products wash away instead of building up on the walls of the pipe. It is rust that clogs up iron piping, and sedimentary matter in the water may contribute after the pipe is partly clogged. On this account, plumbers do not need to "oversize" the pipes of copper and brass; that is, they do not have to allow for a great loss of pipe capacity in the future by the filling up of the bore of the pipe with incrusting material produced by the reaction of the acids and salts in the water with the metal.

*Each of the available piping materials has proved satisfactory in some fields, and each has been found unsatisfactory in others.* In selecting a material for water piping, it thus becomes necessary to examine the metals and alloys available in consideration of their cost and then to balance them against the water and conditions of use.

Both steel and wrought iron are available in the uncoated or "black" and galvanized (zinc-coated) types. For the house piping system, the use of ferrous metals without a zinc coating is considered inadvisable, except possibly in the case of an unusual water which is exceptionally free from corrosive constituents, as determined by satisfactory experience of others with black pipe over a number of years in the same locality.

The zinc coating (galvanizing) on wrought iron or steel pipe in cold-water systems lengthens the life of pipe by serving as a protective surface and protects the pipe by electrochemical action. (With hot water, a zinc coating affords little or no electrochemical protection against corrosion of parts that may be exposed, although in general it delays the initial appearance of rust or so-called "red water" and so in many instances extends the useful life of the pipe.) The protective value of the zinc coating depends upon the quality of the job of galvanizing that was done, and primarily upon the thickness

of the coating. The improvement in life is believed to be roughly proportional to the thickness of the coating. Unfortunately the consumer who buys galvanized pipe does not have a great deal of opportunity to determine whether the pipe his plumber will use will be heavily or lightly coated. According to Dr. H. H. Uhlig, in his book, *The Corrosion Handbook*, the zinc coating affords electrochemical protection only where the layer of zinc is intact. He cites a report of service tests in Baltimore in which with cold water the depth of corrosion pits in galvanized pipe was only about one-half that of uncoated pipe. However, with hot water, the depth of pitting of the galvanized piping was greater than with the uncoated pipe. This would not be an argument for the use of uncoated pipes, however, as the zinc coating is necessary with many water supplies in order to prevent the development of "red water" carrying iron in solution. The problem of corrosion of the outside of pipes buried in the soil is a difficult one, and will not be discussed here.

It has been found that with hot water having an average pH of 7.7, in service line tests, there was little difference in the corrosion rate whether black wrought iron or steel pipes were used. With hot-water lines, a large part of the zinc coating was removed after about four years with both wrought iron and galvanized steel piping, and thereafter corrosion of the iron and steel proceeded at a more rapid rate. There appeared not to be much difference between the results on wrought iron and those on steel after about 13 years. In the cold-water lines after the same period, there was very little loss of weight for either material, and the zinc coating was intact, with no evidence of pitting. There is some evidence that wrought iron pipe as marketed carries a somewhat heavier zinc coating than steel.

Laboratory tests by the National Bureau of Standards, conducted on cold-water lines with ungalvanized materials, indicated that under specified test conditions there was little if any difference in the internal corrosion of black wrought iron and black plain carbon steel pipe after ten years of use.

Galvanized steel is the cheapest of all widely used pipe materials. Plumbers like to use it because the cutting and threading required is time-consuming without being arduous.

One-half inch galvanized steel pipe sells at about \$14 per 100 feet as compared with about \$26 for galvanized wrought iron and \$32 for copper tubing. Since 150 to 200 feet will go a

long way toward piping an average small home, it is evident that the savings effected in cost of the pipe itself (see Table I) will not normally justify use of steel (or wrought iron) in place of copper tubing (or even red brass pipe—where brass is suitable to the water used). The cost of replacing clogged pipes in later years will likely be far more than any sum that would be expended at the time the house is built, to avoid the problem. The possibility of damage to the home by leaks from corroded piping is likewise a factor to be considered. An exception can be made for purely temporary installations.

Copper has advanced very rapidly as a material for water piping because of its relatively high resistance to corrosion, and because of its flexibility, ease of joining, low resistance to flow of water, and reasonable installed cost. Copper tubing<sup>1</sup> is generally a good deal more resistant to corrosion than ferrous materials and is not nearly so likely to clog with incrustations or sedimentations; plumbers are mistaken in believing that copper tubing does not corrode at all internally when used as household piping.

The labor of installing copper tubing should be materially lower because of the use of soldered fittings and the ease of bending and fishing through walls and around obstructions. Unfortunately this saving is not always passed along to the consumer. Plumbers in some localities, notably cold toward labor-saving and time-saving materials, insist upon spending about the same amount of time "preparing" a soldered joint, normally the work of seconds, with a piece of sandpaper, as would be otherwise required to measure, cut, and thread the corresponding joint in steel pipe.

The most common failing in the use of copper is the all-too-prevalent tendency to take unwarranted advantage of the chance to use smaller and thinner-walled tubing. When carried to an extreme, this can obviously offset the advantages which are inherent in the material because of its relatively permanent low resistance to the flow of water. The standard wall thickness of  $\frac{1}{2}$ -inch copper tubing is only about  $\frac{1}{3}$  that of steel piping (0.040 inch as against 0.109 inch); to reduce this further by using smaller tubing is bound to result in dissatisfaction in many installations. CR therefore recommends that the home owner use

<sup>1</sup>There is an important difference between copper water tubing and brass pipe. In the pipe, threaded joints are used for connections; in tubing, either soldered or so-called "compression" fittings are used. Because the thickness of the metal at the base of threads is considerably less than the full thickness of the walls of the brass pipe, this is the weakest point and usually necessitates the use of heavier material than would be the case if substantial amounts were not to be cut away in the threading operation. The saving in metal by not having to allow for the depth of threads at the ends of each length of pipe has been largely responsible for the recent great popularity of copper tubing.

copper tubing or pipe of the same nominal internal diameter (size) as would have been selected had iron or steel pipe been chosen, and further recommends that  $\frac{1}{2}$  inch be the minimum pipe size for all cold- or hot-water lines.

Copper, although less poisonous than lead, presents a definite potential health hazard when present in drinking water. The U. S. Treasury standard for water to be supplied for drinking and culinary purposes by interstate carriers formerly required that the copper content should not exceed 0.2 ppm. Unfortunately, in 1942 this figure was raised to 3 ppm., which seems rather high, since copper is definitely a toxic material and is present in a large part of the food supply because of factory processing of foods (and bottled beverages) in copper and copper-alloy vessels and piping. Besides, copper appears in water from the fact that reservoirs are often treated with copper sulfate for the control of microscopic organisms and algae. (This is almost standard practice in the treatment of stored surface water.)

**Table I**  
**Labor and Material Costs<sup>1</sup> of Various Water Piping Materials**

(Assuming new construction; 6-room, 2-story house with 1 bath, kitchen, laundry tubs, outdoor hose tap;  $\frac{3}{4}$ -inch pipe to water heater,  $\frac{1}{2}$ -inch elsewhere.)

|   | Black<br>Steel <sup>2</sup> | Gal-<br>van-<br>ized<br>Steel | Gal-<br>van-<br>ized<br>Wrgt.<br>Iron | Cop-<br>per<br>Tubing | Red<br>Brass<br>Pipe |
|---|-----------------------------|-------------------------------|---------------------------------------|-----------------------|----------------------|
| Pipe<br>(<br>130 ft. of<br>1/2 in.<br>30 ft. of<br>3/4 in.<br>) | \$15.00<br>4.00             | \$18.00<br>5.00               | \$34.00<br>10.00                      | \$41.00<br>14.00      | \$113.00<br>34.00    |
| Fittings <sup>3</sup> (but not<br>fixtures)                     | 17.00                       | 17.00                         | 17.00                                 | 41.00                 | 110.00               |
| Labor <sup>4</sup>  | 80.00                       | 80.00                         | 80.00                                 | 80.00                 | 80.00                |
| <b>TOTAL</b>  | <b>116.00</b>               | <b>120.00</b>                 | <b>141.00</b>                         | <b>176.00</b>         | <b>337.00</b>        |
| Total as Percent<br>of Cost of Gal-<br>vanized Steel<br>Piping  | 97                          | 100                           | 117                                   | 147                   | 280                  |

<sup>1</sup>These costs are, of course, only rough approximations, as substantial differences are possible in prices charged by local dealers, and due to the effects of haulage charges, profit margins, etc.

<sup>2</sup>Black (ungalvanized) steel is not ordinarily recommended; it is shown for cost comparison; savings affected by its use are often small or negligible.

<sup>3</sup>Making a standard assumption that cost of fittings will be 75 percent of the cost of galvanized steel pipe (or 75 percent of the cost of copper or brass pipe, in those columns).

<sup>4</sup>Figured at \$5 per hour for plumber and helper. A time allowance of two days has been made, which should be generous, as engineering estimating handbooks show that this work should be done in from 12 to 15 hours.

# Ratings of Motion Pictures

**T**HIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines — some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

*Box Office, Cue, Daily News (N.Y.), The Exhibitor, The Farm Journal, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, New York World-Telegram & Sun, Parents' Magazine, Release of the D.A.R., Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, Time, Variety (weekly).*

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

|  |   |
|--|---|
| <i>adv</i> —adventure  | <i>mel</i> —melodrama                                   |
| <i>biog</i> —biography   | <i>mus</i> —musical                                     |
| <i>color</i> —in color (Technicolor, Cinecolor, Tricolor, Magnacolor, Vitacolor, etc.) | <i>myst</i> —mystery                                    |
| <i>cartoon</i>   | <i>rom</i> —dramatization of a novel                    |
| <i>com</i> —comedy   | <i>sci</i> —science fiction                             |
| <i>cri</i> —crime and capture of criminals   | <i>soc</i> —social problem drama                        |
| <i>doc</i> —documentary  | <i>trav</i> —travelogue                                 |
| <i>dr</i> —drama   | <i>war</i> —dealing with the lives of people in wartime |
| <i>fan</i> —fantasy  | <i>wes</i> —western                                     |
| <i>hist</i> —founded on historical incident  |   |

| A | B  | C  |   |
|---|----|----|---|
| — | 8  | 1  | <b>Abbott and Costello Meet Dr. Jekyll and Mr. Hyde</b> ..... <i>com AY</i> |
| — | 4  | 5  | <b>Act of Love</b> ..... <i>war-dr A</i>                                    |
| 2 | 12 | 4  | <b>Actress, The</b> ..... <i>dr A</i>                                       |
| — | 3  | 2  | <b>Affair in Monte Carlo (British)</b> ..... <i>dr-c A</i>                  |
| — | 1  | 2  | <b>Affairs of Messalina, The (Italian)</b> ..... <i>hist-dr A</i>           |
| — | 1  | 2  | <b>Alaska Seas</b> ..... <i>mel A</i>                                       |
| 1 | 9  | 4  | <b>All the Brothers Were Valiant</b> ..... <i>adv-c A</i>                   |
| 1 | 4  | 4  | <b>Annapurna</b> ..... <i>doc-c A</i>                                       |
| — | 1  | 12 | <b>Appointment in Honduras</b> ..... <i>mel-c A</i>                         |
| — | 5  | 4  | <b>Back to God's Country</b> ..... <i>mel-c A</i>                           |
| — | 3  | 9  | <b>Bad for Each Other</b> ..... <i>dr A</i>                                 |
| — | 5  | 3  | <b>Bandits of the West</b> ..... <i>wes AYC</i>                             |
| 4 | 11 | 4  | <b>Beggar's Opera, The (British)</b> ..... <i>mus-dr-c A</i>                |
| — | 10 | 5  | <b>Beneath the 12-Mile Reef</b> ..... <i>mel-c A</i>                        |
| 1 | 12 | 3  | <b>Big Heat, The</b> ..... <i>cri-mel A</i>                                 |
| — | 3  | 6  | <b>Bigamist, The</b> ..... <i>dr A</i>                                      |
| 1 | 1  | 4  | <b>Blades of the Musketeers</b> ..... <i>adv AY</i>                         |
| 1 | 6  | 4  | <b>Blowing Wild</b> ..... <i>mel A</i>                                      |
| — | 12 | 2  | <b>Blueprint for Murder, A</b> ..... <i>cri-mel A</i>                       |
| — | 3  | 2  | <b>Border River</b> ..... <i>mel-c A</i>                                    |
| — | 4  | 12 | <b>Botany Bay</b> ..... <i>adv-c A</i>                                      |
| — | 6  | 3  | <b>Both Sides of the Law (British)</b> ..... <i>cri-mel A</i>               |
| — | 4  | —  | <b>Boy from Oklahoma, The</b> ..... <i>wes-c AYC</i>                        |

| A  | B  | C  |   |
|----|----|----|---|
| —  | 11 | 6  | <b>Caddy, The</b> ..... <i>mus-com AYC</i>                        |
| 2  | 6  | 4  | <b>Calamity Jane</b> ..... <i>mus-wes-c AYC</i>                   |
| —  | 1  | 4  | <b>Captain John Smith and Pocahontas</b> ..... <i>hist-dr-c A</i> |
| —  | —  | 5  | <b>Captain Scarlett</b> ..... <i>adv-c AY</i>                     |
| 1  | 11 | 2  | <b>Captain's Paradise, The (British)</b> ..... <i>com A</i>       |
| 4  | 9  | 2  | <b>Cease Fire</b> ..... <i>war-dr AY</i>                          |
| —  | 5  | 2  | <b>Champ for a Day</b> ..... <i>mel A</i>                         |
| —  | —  | 4  | <b>Charge of the Lancers</b> ..... <i>mel-c A</i>                 |
| 6  | 3  | 3  | <b>China Venture</b> ..... <i>war-mel-c A</i>                     |
| —  | 5  | —  | <b>City is Dark, The</b> ..... <i>mys-mel A</i>                   |
| —  | 4  | 2  | <b>Clipped Wings</b> ..... <i>war-com A</i>                       |
| —  | 3  | 5  | <b>Combat Squad</b> ..... <i>war-mel AYC</i>                      |
| —  | 9  | 1  | <b>Command, The</b> ..... <i>wes-c AYC</i>                        |
| —  | 7  | 3  | <b>Conquest of Cochise</b> ..... <i>hist-mel-c AYC</i>            |
| 6  | 5  | —  | <b>Conquest of Everest, The (British)</b> ..... <i>doc-c AY</i>   |
| 1  | 4  | —  | <b>Cowboy, The</b> ..... <i>wes-doc-c AYC</i>                     |
| —  | 10 | 1  | <b>Crazylegs, All-American</b> ..... <i>dr AYC</i>                |
| —  | 5  | 3  | <b>Crime Wave</b> ..... <i>cri-mel A</i>                          |
| 1  | 9  | 7  | <b>Decameron Nights (British)</b> ..... <i>rom-c A</i>            |
| —  | 9  | 5  | <b>Desperate Moment (British)</b> ..... <i>mel A</i>              |
| —  | 4  | 10 | <b>Devil's Canyon</b> ..... <i>mel-c A</i>                        |
| —  | 4  | 4  | <b>Diamond Queen, The</b> ..... <i>adv-c AYC</i>                  |
| —  | 4  | 9  | <b>Donovan's Brain</b> ..... <i>sci-mel A</i>                     |
| —  | 3  | 3  | <b>Doomed (Italian)</b> ..... <i>mel A</i>                        |
| —  | 4  | 3  | <b>Down Laredo Way</b> ..... <i>wes AY</i>                        |
| —  | 2  | 4  | <b>Drums of Tahiti</b> ..... <i>mel-c A</i>                       |
| —  | 2  | 11 | <b>East of Sumatra</b> ..... <i>adv-c A</i>                       |
| 1  | 9  | 3  | <b>Easy to Love</b> ..... <i>mus-com-c A</i>                      |
| —  | 5  | 6  | <b>Eddie Cantor Story, The</b> ..... <i>mus-biog-c AYC</i>        |
| —  | 1  | 5  | <b>El Alamein</b> ..... <i>war-mel AYC</i>                        |
| —  | 3  | 4  | <b>El Paso Stampede</b> ..... <i>wes AYC</i>                      |
| 1  | 13 | 1  | <b>Escape from Fort Bravo</b> ..... <i>mel-c AYC</i>              |
| —  | 1  | 6  | <b>Fake, The</b> ..... <i>mel A</i>                               |
| —  | 5  | —  | <b>Fighter Attack</b> ..... <i>war-dr-c AY</i>                    |
| 2  | 1  | —  | <b>Fighting Lawman, The</b> ..... <i>mel AYC</i>                  |
| —  | 6  | —  | <b>Final Test, The (British)</b> ..... <i>com AYC</i>             |
| —  | 3  | 4  | <b>Flight Nurse</b> ..... <i>war-dr AYC</i>                       |
| —  | 2  | 12 | <b>Flight to Tangier</b> ..... <i>cri-mel-c A</i>                 |
| —  | 1  | 3  | <b>Folly to be Wise (British)</b> ..... <i>com A</i>              |
| —  | 4  | 7  | <b>Forbidden</b> ..... <i>cri-mel A</i>                           |
| —  | 3  | 4  | <b>French Line, The</b> ..... <i>mus-dr-c A</i>                   |
| —  | 1  | 4  | <b>Frightened Bride, The (British)</b> ..... <i>dr A</i>          |
| 14 | 4  | 1  | <b>From Here to Eternity</b> ..... <i>war-dr A</i>                |
| —  | —  | 5  | <b>Gay Adventure, The (British)</b> ..... <i>dr A</i>             |
| —  | 1  | 6  | <b>Genevieve (British)</b> ..... <i>com-c A</i>                   |
| —  | 1  | 5  | <b>Gentle Gunman, The (British)</b> ..... <i>mel A</i>            |
| —  | —  | 3  | <b>Geraldine</b> ..... <i>mus-com AYC</i>                         |
| —  | —  | 1  | <b>Gilbert and Sullivan (see Story of)</b>                        |
| —  | —  | 3  | <b>Give a Girl a Break</b> ..... <i>mus-com-c AY</i>              |
| —  | —  | 13 | <b>Glass Webb, The</b> ..... <i>mys-mel A</i>                     |
| —  | 3  | 4  | <b>Glenn Miller Story, The</b> ..... <i>mus-biog-c AYC</i>        |
| —  | 3  | —  | <b>Go, Man, Go</b> ..... <i>dr AYC</i>                            |
| —  | 5  | 5  | <b>Golden Blade, The</b> ..... <i>adv-c AYC</i>                   |
| 1  | 4  | 2  | <b>Golden Coach, The (Italian)</b> ..... <i>dr-c A</i>            |
| —  | 3  | 2  | <b>Grapes Are Ripe, The (German)</b> ..... <i>com AYC</i>         |
| —  | 1  | 6  | <b>Great Diamond Robbery, The</b> ..... <i>cri-com AYC</i>        |
| —  | 2  | 3  | <b>Great Jesse James Raid, The</b> ..... <i>wes-c AYC</i>         |
| —  | 2  | 6  | <b>Greatest Love, The (Italian)</b> ..... <i>dr A</i>             |
| 1  | 3  | 3  | <b>Gun Fury</b> ..... <i>wes-c A</i>                              |
| —  | —  | 8  | <b>Half a Hero</b> ..... <i>com AYC</i>                           |
| —  | 2  | 7  | <b>Heidi (Swiss)</b> ..... <i>dr AYC</i>                          |

| A  | B  | C  |   | A  | B  | C  |   |
|----|----|----|---|----|----|----|---|
| —  | 7  | 6  | <b>Here Come the Girls</b> ..... <i>mus-com-c A</i>                           | —  | 2  | 2  | <b>Queen of Sheba (Italian)</b> ..... <i>dr A</i>                                       |
| —  | 1  | 4  | <b>His Last 12 Hours (Italian)</b> ..... <i>dr A</i>                          | —  | 2  | 2  | <b>Red River Shore</b> ..... <i>wes AYC</i>   |
| —  | 5  | —  | <b>His Majesty O'Keefe</b> ..... <i>adv-c AY</i>                              | 1  | 2  | —  | <b>Riders to the Stars</b> ..... <i>sci-mel-c AYC</i>                                   |
| 7  | 7  | —  | <b>Hondo</b> ..... <i>wes-c AY</i>  | 2  | 4  | —  | <b>Rob Roy</b> ..... <i>adv-c AYC</i>   |
| —  | 5  | 2  | <b>Horse's Mouth, The (British)</b> ..... <i>com AYC</i>                      | 9  | 5  | 2  | <b>Robe, The</b> ..... <i>dr-c AYC</i>  |
| —  | 3  | 2  | <b>Hot News</b> ..... <i>mel A</i>  | —  | 1  | 4  | <b>Royal African Rifles, The</b> ..... <i>war-mel-c A</i>                               |
| 8  | 7  | 2  | <b>How to Marry a Millionaire</b> ..... <i>com-c A</i>                        | —  | —  | —  | <b>Run for the Hills</b> ..... <i>com AYC</i>   |
| 4  | 8  | 6  | <b>Island in the Sky</b> ..... <i>dr AYC</i>                                  | —  | 1  | 4  | <b>Saadia</b> ..... <i>mel-c AY</i>   |
| 2  | 7  | 1  | <b>It Should Happen to You</b> ..... <i>com A</i>                             | 6  | 9  | —  | <b>Sabre Jet</b> ..... <i>war-dr-c AYC</i>  |
| —  | 2  | 5  | <b>It Started in Paradise (British)</b> ..... <i>dr-c A</i>                   | 5  | 6  | 2  | <b>Saginaw Trail</b> ..... <i>mus-wes AY</i>  |
| 1  | 3  | 8  | <b>Jack Slade</b> ..... <i>wes A</i>  | 6  | 2  | —  | <b>Sailor of the King (British)</b> ..... <i>nov A</i>                                  |
| —  | 2  | 3  | <b>Jennifer</b> ..... <i>mys-dr A</i>   | 6  | 2  | —  | <b>Sea of Lost Ships</b> ..... <i>dr AYC</i>  |
| —  | 2  | 1  | <b>Jivaro</b> ..... <i>adv-c A</i>  | 1  | 3  | —  | <b>Shadow Man</b> ..... <i>mys-mel A</i>  |
| 2  | 12 | 2  | <b>Joe Louis Story, The</b> ..... <i>biog AY</i>                              | 2  | 2  | —  | <b>Shadows of Tombstone</b> ..... <i>wes AYC</i>  |
| —  | 3  | 1  | <b>Journey to Love (Italian)</b> ..... <i>com A</i>                           | 1  | 6  | —  | <b>Shark River</b> ..... <i>mel-c A</i>   |
| —  | 3  | 2  | <b>Jubilee Trail</b> ..... <i>wes-c A</i>                                     | 4  | —  | —  | <b>She Couldn't Say No</b> ..... <i>com A</i>   |
| —  | 8  | —  | <b>Killer Ape, The</b> ..... <i>mel AYC</i>                                   | 2  | 8  | —  | <b>Sins of Jezebel</b> ..... <i>dr-c A</i>  |
| 1  | 8  | 3  | <b>King of the Khyber Rifles</b> ..... <i>mel-c AYC</i>                       | 5  | 5  | —  | <b>Sky Commando</b> ..... <i>war-mel AYC</i>  |
| 10 | 4  | 3  | <b>Kiss Me Kate</b> ..... <i>mus-com-c A</i>                                  | 2  | 6  | 7  | <b>Slasher, The (British)</b> ..... <i>cri-mel A</i>                                    |
| 6  | 8  | 1  | <b>Knights of the Round Table</b> ..... <i>adv-c AYC</i>                      | 5  | 3  | —  | <b>So Big</b> ..... <i>dr AY</i>  |
| —  | 1  | 4  | <b>La Favorita (Italian)</b> ..... <i>mus-dr A</i>                            | 5  | 7  | —  | <b>So Little Time (British)</b> ..... <i>war-dr A</i>                                   |
| —  | 1  | 4  | <b>Last of the Pony Riders</b> ..... <i>mus-wes AYC</i>                       | —  | —  | —  | <b>Something Money Can't Buy</b> ..... <i>(British)</i> ..... <i>com A</i>              |
| —  | 1  | 4  | <b>Limping Man, The</b> ..... <i>mys-mel A</i>                                | 5  | 2  | —  | <b>Song of the Land</b> ..... <i>doc-c AYC</i>  |
| —  | 11 | 6  | <b>Lion is in the Streets, A</b> ..... <i>dr-c A</i>                          | 1  | 4  | 1  | <b>Spice of Life (French)</b> ..... <i>com A</i>  |
| 4  | 8  | —  | <b>Little Fugitive, The</b> ..... <i>dr A</i>                                 | 1  | 7  | —  | <b>Stand at Apache River, The</b> ..... <i>wes-c AYC</i>                                |
| 10 | 6  | —  | <b>Living Desert, The</b> ..... <i>doc-c AYC</i>                              | 3  | 4  | —  | <b>Steel Lady, The</b> ..... <i>mel AYC</i>   |
| 1  | 4  | —  | <b>Long, Long Trailer, The</b> ..... <i>mus-com-c AYC</i>                     | 7  | 5  | 2  | <b>Story of Gilbert and Sullivan</b> ..... <i>(British)</i> ..... <i>mus-biog-c AYC</i> |
| —  | 3  | 4  | <b>Louisiana Territory</b> ..... <i>trav-c AY</i>                             | 3  | 8  | —  | <b>Stranger on the Prowl</b> ..... <i>propaganda-dr A</i>                               |
| —  | 4  | —  | <b>Lucky Five, The (Italian)</b> ..... <i>dr A</i>                            | 1  | 12 | —  | <b>Stranger Wore a Gun, The</b> ..... <i>wes-c AY</i>                                   |
| —  | 1  | 4  | <b>Lure of the Sila (Italian)</b> ..... <i>mel A</i>                          | 7  | 1  | —  | <b>Sweethearts on Parade</b> ..... <i>mus-com-c AYC</i>                                 |
| —  | 6  | 10 | <b>Main Street to Broadway</b> ..... <i>dr A</i>                              | —  | —  | —  | —   |
| 2  | 8  | 4  | <b>Man Between, The (British)</b> ..... <i>war-mel A</i>                      | 10 | 7  | —  | <b>Take the High Ground</b> ..... <i>war-dr-c A</i>                                     |
| 1  | 7  | —  | <b>Man Crazy</b> ..... <i>soc-dr A</i>  | 2  | 8  | —  | <b>Tanga Tika</b> ..... <i>dr-c A</i>   |
| —  | 1  | 7  | <b>Man from Cairo, The</b> ..... <i>mel A</i>                                 | —  | 1  | 3  | <b>Terror Street (British)</b> ..... <i>cri-mel A</i>                                   |
| —  | 5  | —  | <b>Man in Hiding (British)</b> ..... <i>mys-mel A</i>                         | 7  | 7  | —  | <b>Those Readheads from Seattle</b> ..... <i>mus-com-c AY</i>                           |
| —  | 8  | 2  | <b>Man in the Attic</b> ..... <i>cri-dr A</i>                                 | 5  | 3  | —  | <b>Three Girls from Rome (Italian)</b> ..... <i>dr A</i>                                |
| —  | 2  | 4  | <b>Man of Conflict</b> ..... <i>dr AY</i>                                     | 3  | 8  | —  | <b>Three Sailors and a Girl</b> ..... <i>mus-com-c A</i>                                |
| —  | 5  | 6  | <b>Marry Me Again</b> ..... <i>com A</i>                                      | 1  | 3  | —  | <b>Three Young Texans</b> ..... <i>mel-c A</i>  |
| —  | 3  | 1  | <b>Mask of the Himalayas</b> ..... <i>dr A</i>                                | 5  | 6  | —  | <b>Thunder Over the Plains</b> ..... <i>mel-c AYC</i>                                   |
| —  | 11 | 2  | <b>Master of Ballantrae</b> ..... <i>adv-c AYC</i>                            | 1  | 9  | —  | <b>Thy Neighbor's Wife</b> ..... <i>dr A</i>  |
| —  | 1  | 2  | <b>Mexican Manhunt</b> ..... <i>mel AY</i>                                    | 4  | 4  | —  | <b>Time, Gentlemen, Please!</b> ..... <i>(British)</i> ..... <i>com A</i>               |
| —  | 1  | 5  | <b>Miss Robin Crusoe</b> ..... <i>dr-c A</i>                                  | 2  | 12 | 1  | <b>Tittfield Thunderbolt</b> ..... <i>(British)</i> ..... <i>com-c AYC</i>              |
| 2  | 4  | 7  | <b>Miss Sadie Thompson</b> ..... <i>mel-c A</i>                               | —  | 1  | 2  | <b>Topeka</b> ..... <i>wes AYC</i>  |
| —  | 2  | 7  | <b>Mission Over Korea</b> ..... <i>war-mel AY</i>                             | —  | 11 | 3  | <b>Torch Song</b> ..... <i>dr-c A</i>   |
| 2  | 11 | 4  | <b>Mister Scoutmaster</b> ..... <i>com AYC</i>                                | —  | 3  | —  | <b>Trail of the Arrow</b> ..... <i>wes AYC</i>  |
| 4  | 8  | 5  | <b>Mogambo</b> ..... <i>adv-c A</i>   | —  | 4  | 7  | <b>Trent's Last Case (British)</b> ..... <i>cri-mel A</i>                               |
| 1  | 2  | 6  | <b>Money from Home</b> ..... <i>com-c AY</i>                                  | 1  | 8  | —  | <b>Tumbleweed</b> ..... <i>wes-c AYC</i>  |
| —  | —  | 3  | <b>Monsoon</b> ..... <i>mel A</i>   | —  | —  | —  | —   |
| —  | 2  | 11 | <b>Moonlighter, The</b> ..... <i>wes A</i>                                    | 5  | 5  | —  | <b>Undercover Agent (British)</b> ..... <i>mel A</i>                                    |
| —  | 7  | 3  | <b>Mr. Denning Drives North</b> ..... <i>(British)</i> ..... <i>mys-mel A</i> | 1  | 2  | —  | <b>Unknown Lover, The (Italian)</b> ..... <i>dr A</i>                                   |
| —  | 7  | 6  | <b>Mr. Potts Goes to Moscow</b> ..... <i>(British)</i> ..... <i>com A</i>     | —  | 2  | 6  | <b>Valley of the Headhunters</b> ..... <i>adv-c AYC</i>                                 |
| —  | 10 | 1  | <b>Murder on Monday (British)</b> ..... <i>cri-mel AY</i>                     | —  | 1  | 9  | <b>Veils of Bagdad, The</b> ..... <i>fan-c A</i>  |
| 1  | 4  | —  | <b>Mystery Lake</b> ..... <i>doc-c AYC</i>                                    | —  | 5  | 9  | <b>Vicki</b> ..... <i>cri-mel A</i>   |
| —  | 1  | 7  | <b>Nebraskan, The</b> ..... <i>wes-c A</i>                                    | —  | 6  | 7  | <b>Village, The (Swiss)</b> ..... <i>dr A</i>   |
| —  | 5  | 5  | <b>Night is My Kingdom, The</b> ..... <i>(French)</i> ..... <i>dr A</i>       | —  | 6  | —  | <b>Violated</b> ..... <i>cri-mel A</i>  |
| —  | 4  | 11 | <b>99 River Street</b> ..... <i>cri-mel A</i>                                 | —  | 7  | 10 | <b>Walking My Baby Back Home</b> ..... <i>mus-com-c A</i>                               |
| —  | 3  | 6  | <b>No Escape</b> ..... <i>cri-mel A</i>                                       | —  | 2  | 4  | <b>War Arrow</b> ..... <i>war-mel-c AY</i>  |
| —  | 6  | 3  | <b>Overcoat, The (Italian)</b> ..... <i>dr A</i>                              | —  | 3  | —  | <b>White Goddess</b> ..... <i>mel AY</i>  |
| —  | 7  | 5  | <b>Paratrooper</b> ..... <i>war-dr-c AY</i>                                   | —  | 2  | 2  | <b>White Hell of Pitz Palu, The</b> ..... <i>dr A</i>                                   |
| —  | 9  | —  | <b>Paris Model</b> ..... <i>dr A</i>  | 2  | 4  | —  | <b>White Mane</b> ..... <i>dr A</i>   |
| —  | 1  | 7  | <b>Passionate Sentry, The</b> ..... <i>(British)</i> ..... <i>com A</i>       | —  | 2  | 7  | <b>Wicked Woman</b> ..... <i>dr A</i>   |
| 1  | 4  | 1  | <b>Personal Affair (British)</b> ..... <i>mel A</i>                           | —  | 4  | 12 | <b>Wild One, The</b> ..... <i>mel A</i>   |
| —  | 7  | 9  | <b>Plunder of the Sun</b> ..... <i>mel A</i>                                  | —  | 8  | 3  | <b>Wings of the Hawk</b> ..... <i>mel-c AY</i>  |
| —  | 1  | 8  | <b>Prisoners of the Casbah</b> ..... <i>adv-c A</i>                           | —  | 2  | 2  | <b>Yellow Balloon (British)</b> ..... <i>cri-mel A</i>                                  |
| —  | 3  | 8  | <b>Project M-7 (British)</b> ..... <i>war-dr AY</i>                           | —  | 4  | 1  | <b>Yesterday and Today</b> ..... <i>dr AYC</i>  |
| —  | 5  | 5  | <b>Project Moonbase</b> ..... <i>sci AY</i>                                   | —  | 4  | 3  | <b>Young Caruso (Italian)</b> ..... <i>mus-biog A</i>                                   |
| 2  | 3  | —  | <b>Prowlers of the Everglades</b> ..... <i>doc-c AYC</i>                      | —  | —  | —  | —   |

## The Consumers' Observation Post

(Continued from page 4)

court. Those who understand the high costs of legal services and procedures may well point out to the present administration that considerable economy can be effected by foregoing such costly fishing expeditions.

THAT TV REPAIRMAN again is a topic of discussion. It appears that his services can be quite an item in a dealer's budget. According to one journal, a dealer should expect to take in \$50 a day for the services of a skilled serviceman. On that basis, the owner of a TV set who calls in a repairman can figure just about how much he will have to pay for a call, remembering that time starts when the repairman leaves the shop. Parts, of course, are extra. According to one explanation of a parts warranty, a parts replacement guarantee covers only the actual parts; services and handling charges are extra and are not included. Incidentally, one journal has a unique suggestion of a way to curb price cutting on TV sets and other appliances. It seems that selling on the installment plan, by time payments, does the trick.

PERFUME IS A HIGH PRICED ITEM partly due to the 20 percent federal excise tax and in the case of French perfumes to the high import duty. Capitalizing on the tendency of consumers to associate the quality of perfume with high price, three brands during the Christmas shopping season were found by the National Better Business Bureau to be far overpriced and misrepresented. The brands involved were White Christmas, Ecstasy, and Faun advertised at \$15 to \$18.75 an ounce in two fashion magazines and sold by door-to-door salesmen at anywhere from \$1 to \$8 a bottle. Displays of the advertising in well-known, reputable magazines, reported the National Better Business Bureau, were usually sufficient to convince the intended



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victim of the great bargain offered. Even before one advertisement of the \$18.75 per ounce ad for Ecstasy perfume appeared the product was reportedly being offered at 75 cents an ounce to a New York wholesaler. The two magazines involved have assured the National Better Business Bureau that they will be more careful about the perfume advertising they accept in the future.

\* \* \*

IF THE PUBLIC INSISTS on holding down labor costs, prices will also be held down. That was the conclusion of an eminent labor economist at a professional meeting late last year discussing the question of whether wage-fixing arrangements in the American market are inflationary. His conclusion was that wage fixing arrangements have a small inflationary bias in that they tended to put wages up fast enough to require a slow advance in the price level. The public could keep prices down by bolstering employer resistance to union demands, noted the economist, Sumner H. Slichter, who pointed out that in the past employers have yielded readily to the claims of labor partly because "they have felt that a fight on behalf of the consumer would win them less public approval than would the granting of liberal wage concessions."

\* \* \*

NEW OR NEWLY TESTED:

Lux Minute Minder No. 2428 (The Lux Clock Mfg. Co., Waterbury 20, Conn.), \$3.95. Plastic case, white with red numerals; device resembled a small clock and was designed for timing cooking, baking, photographic work, home permanents, reminding one of appointments, etc. Size, 3-3/8 x 3 x 2-1/2 inches, with single "ding" signal. Setting can be made from 1 to 60 minutes. The accuracy of this timer was checked, particularly for timing short intervals, and it was found to be satisfactory with an error of less than 1/4 minute for the most part. The ring could be heard plainly from the next room with the door closed. The device was examined carefully and was considered satisfactory in design and construction. Also available is a Lux Minute Minder No. 1928 priced at \$4.95, which is somewhat larger and which has a longer ring. It was also tested and found satisfactory with respect to accuracy, design, and construction.

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# Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

**Bach:** *Well-Tempered Clavier*. Books 1 and 2. Tureck (piano). 6 sides, each book. Decca DX 127/8. \$35.70. Miss Tureck's playing of these historic compositions is vital, even, imaginative. But her competition is the great Landowska (harpsichord) recorded by Victor. **A** **A**

**Beethoven:** *Symphony No. 6*. Vienna Symphony Orchestra under van Otterloo. Epic LC 3011. \$5.95. Relaxed playing of the lovely "Pastorale." Well recorded except for boomy bass. **A** **A**

**Brahms:** *Trio for Piano, Violin, Cello*, Op. 8. Badura-Skoda, Fournier, Janigro. Westminster WL 5237. \$5.95. Warm, lyric playing of a masterpiece. The same may be said for Westminster's new release of Beethoven's *String Trio in E Flat* with Pougnet, Riddle, Pini. **AA** **AA**

**Chopin:** *Concerto No. 1*. Uninsky (piano) with the Hague Philharmonic Orchestra under van Otterloo. Epic LC 3012. \$5.95. Standard concerto played sensitively, dexterously, altogether first rate. Epic LC 3020 offers the Schumann *Piano Concerto* played very well by Clara Haskill and the Liszt *Piano Concerto No. 1* played less well by de Groot. Fair recording. **AA** **A**

**Copland:** *Music for the Theatre* & **Weill:** *Kleine Dreigroschenmusik*. MGM Orchestra under Solomon. MGM E 3095. \$4.85. Two engaging though dated suites utilizing the jazz medium. Effectively played. **AA** **A**

**Mozart:** *Divertimento No. 17* (K344). Vienna State Opera Orchestra under Prohaska. Vanguard VRS 441. \$5.95. Most enjoyable of a batch of new Vanguards, thanks principally to the deft solo violin playing of Jan Tomasow and to Mozart! The orchestra is a little ragged. (Vanguard's *Four Bach Suites* is played rather drill-masterly by the same orchestra, but the formidable Bloch *String Quartet No. 2*, played by the Musical Arts Quartet, is highly recommended.) **A** **AA**

**Prokofiev:** *Classical Symphony* & **Borodin:** *On the Steppes of Central Asia* & **Glinka:** *Russian and Ludmilla Overture* & **Moussorgsky:** *Night on the Bare Mountain*. Paris Conservatory Orchestra under Ansermet. London LL 864. \$5.95. Clarity, slow tempos and subdued dramatics characterize Ansermet's performance of these popular Russian pieces. Borodin and Moussorgsky lose by this treatment, the others gain. **A** **AA**

**Schoenberg:** *The Gurre-Lieder*. Chorus and Orchestra of the New Symphony Society of Paris. Soloists, etc., under Leibowitz. 6 sides, Haydn Society HSL 100. \$18.50. This 2 hour piece so reminiscent of *Tristan und Isolde* in many respects, so revolutionary in others, so often discussed, so seldom heard is performed and directed with loving care. It is unfortunate the recording of the orchestra is not more forward and transparent, for the voice recording is good. Surfaces sputter. Schoenberg followers may want to look into his more demanding string quartets, ably played by the Juilliard String Quartet and well recorded on Columbia SL 188. **AA** **B**

**Schubert:** *Quartets Nos. 6 and 9*. Westminster WL 5224. *Quartets Nos. 10 and 11*. Westminster WL 5222. Vienna Konzerthaus Quartet. \$5.95 each. Highly melodic, romantic music romantically played. **AA** **AA**

**Schumann:** *Davidsbündler Dances*. Urania URLP 7106. **Schumann:** *Kreisleriana* & **Bach:** *English Suite No. 6*. Urania URLP 7107. Gieseking (piano). \$5.95 each. Clear, subtle, standout performance of famous suites. Recording good except for a rare pitch flutter. Best of a recent group of Urania releases. On Westminster WL 5232 Demus plays the *Davidsbündler Dances*

less effectively but with an additional piece on the record, Schumann's *Papillons*. **AA** **A**

**Strauss:** *Graduation Ball*. New Symphony Orchestra under Fistoulari. London LL 883. \$5.95. Superb disk offering the complete ballet music arranged by Dorati from gay, swirling Johann Strauss pieces. Top drawer performance and wide range recording. **AA** **AA**

**Wagner:** *Lohengrin*. von Rohr, Fehnberger, Kupper, etc., with the Bavarian Radio Orchestra and Chorus under Jochum. 8 sides, Decca DX 131. \$23.80. This set exasperates me. Why didn't the engineers allow the climaxes to come through with a reasonable degree of realism? Here climaxes turn up at lower volume than the piano passages which precede them! In other respects the recording is entirely satisfactory. The musical direction is good, never static, and the singing is up to what you would expect to hear in our country's best opera houses. **A** **B**

*Dance Music of Martinique*. L'Orchestre Select-Tango and L'Orchestre Creole Folklorique. Dial 402. \$4. An ethnic series release which ranks above most. Tangos, mazurkas, waltzes, etc., by a small Martinique dance band which features a biting, low register clarinet and sounds like a Caribbean take off on an early New Orleans jazz group. A combination of the cultures of France, Africa, and the Caribbean. **AA** **B**

*Immortal Classics*. Mantovani and His Orchestra. London LL 877. \$5.95. Rubinstein's "Romance," Thorne's "Simple Aveu," Handel's "Largo," and other popular, short, classical pieces played by a moderate size orchestra. There's a tendency to oversentimentalize the slow numbers which are in the majority and to employ the echo chamber excessively. But the orchestra plays capably and the fidelity is otherwise excellent. **A** **A**

*Song of Mendelssohn and Tchaikovsky*. Lichtegg (tenor). London LS 799. \$4.95. Lichtegg's robust singing of the heroic numbers saves this record from a lower rating. Style and nearly all the subtleties that go into fine headed singing are absent. **B** **AA**

## OTHER LP'S RECOMMENDED (A rating for interpretation and for fidelity)

**DECCA:** **Beethoven:** *Eroica Variations*. Arrau (piano). DL 4067.

**Beethoven:** *Symphony No. 7*. Berlin Philharmonic under Jochum. DL 9690.

**Brahms:** *Serenade in D*. Little Orchestra Society under Scherman. DL 9651.

**Liszt:** *A Symphony to Dante's Divine Comedy*. Los Angeles Philharmonic under Wallenstein. DL 9670.

**Wagner:** *Siegfried's Rhine Journey*, *Funeral March*, *Magi Fire Music*. Württemberg State Orchestra under Leitner. DL 4072.

**Weber:** *Overture to Der Freischütz* & **Gluck:** *Overture to Alceste*. Berlin Philharmonic under Lehmann. DL 4075.

*Walther Ludwig Sings Operatic Arias* (tenor). DL 4073. *London Baroque Ensemble Plays Haydn*. DL 4076.

**MGM:** **Debussy:** *La Botte à Joujoux* & **Ibert:** *Histoires*. Pressler (piano). E 3042.

**REB:** **Schütz:** *Little Sacred Concerts*. Hess, Matthén (tenor, baritone). 10.

**REMINGTON:** **Wagner:** *The Flying Dutchman*. High lights. Varnay, Schoeffler, etc. R 199-137.

# Consumers' Research

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